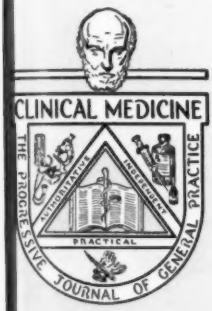
# CLINICAL MEDICINE

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OCTOBER 1944

VOLUME 51 NUMBER 10

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# CLINICAL MEDICINE

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VOLUME 51 OCTOBER, 1944 NUMBER 9


# Inguinal Hernia

## (Its Structure and Repair)

*By*


A. F. HELMBOLD, M. D., *Newport, Ky.*


THE word "hernia" is derived from the Greek word *equos* meaning a projection.

A hernia consists of any and all of the parts of a tissue which have pushed through and beyond their restraining wall, usually through a previously existing opening, which has enlarged.

This definition is broad and covers all types of hernias. Hernias derive their names from various considerations:

1. **Location:** Inguinal, femoral, umbilical, etc.
2. **Etiology:** They may be congenital, acquired or post-operative.
3. **Contents:** They may contain omentum, small bowel, large bowel, bladder, etc.
4. **Condition:** Whether they are reducible, irreducible (incarcerated), and strangulated.
5. **Direction:** Whether direct or indirect.
6. **Physiologic:**
   a. **Functional:** An indirect inguinal hernia is a functional interruption or reopening of a partially obliterated canal — the ligamentum testis is a partially obliterated canal—processus vagivatis.
   b. **Direct:** Which is a structural breakdown.
7. **Degree:**
   a. **Potential:** When the strain reaches but does not exceed


**Fig. 1. a. Abdominal wall; b. Fascia transversalis; c. Peritoneum; d. Processus vaginalis; e. Testicle; f. Obliterated processus vaginalis peritonei; g. Patent vaginal portion of processus vaginalis.**

the elastic limit or breaking down point of the tissues.

b. **Incomplete:** When the functional interruption does not continue to the end of the anatomic structure.

c. **Complete:** When the functional or structural defect carries through all the related anatomic structures.

### Indirect Inguinal Hernia

An indirect inguinal hernia signifies an enlarging of the infundibulum and an opening all the way (complete) or part of the way (incomplete) of the obliterated processus vaginalis peritonei (also called the ligamentum testis).

**Embryologically** (See Fig. 1) the testicles develop between the transversalis fascia and the peritoneum beneath each kidney. As the foetus develops, the testicles descend and at the third foetal month the testicles have dropped to the iliac fossa in the anterior abdominal wall. The spermatic vessels now lie in a peritoneal fold, and pass upward from the testicles. The gubernaculum testes lie in another peritoneal fold and pass downward to the anterior abdominal wall.

As further developmental changes occur, the testicle descends downward with the rudimentary scrotum pushing ahead of it the transversalis fascia which then forms the variously named, endo-abdominal fascia, the infundibular fascia, and the internal spermatic fascia. As the testicle pushes the endo-abdominal fascia ahead of it, it also brings with it the peritoneum. This reflexion of the peritoneum first forms a dimpling in at the opening of the internal ring named the infundibulum. The testicle descends into the inguinal canal about the sixth fetal month. During the eighth month the testicle moves through the inguinal canal pulling along with it a sac of peritoneum and at the ninth month comes to rest in the scrotum when the gubernaculum attaches itself to the inferior pole of the scrotum and the peritoneum forms the anterior covering of the testicle, the tunica vaginalis testis which remains patent and does not cover all of the testicle. Along the inguinal caal, the peritoneum becomes fused from the infundibulum to the tunica vaginalis forming the obliterated processus vaginalis or vaginal ligament. When this ligament fails to close, a congenital hernia occurs.

### Anatomy of Indirect Inguinal Hernia

The inguinal region is defined by the area bounded medially by the lateral sheath of the rectus abdominis muscle, inferiorly and laterally by the inguinal (Poupart's) ligament and superiorly by a horizontal line from the anterior superior iliac spine to the rectus abdominis muscle.

The rectus abdominis muscle forms the medial border of the inguinal fossa. It inserts in the ensiform cartilage and the anterior borders of the fifth, sixth and seventh costal cartilages as a flat, thick muscle band and extends downward becoming narrower and thicker to originate in the pubis between the crest and the symphysis. Three to five irregular tendinous insertions, linea transversae, adhere to the anterior surface of the muscle between its origin and insertion. The posterior border of the muscle is not adherent to its sheath.

The three lateral abdominal muscles form a sheath to surround the muscle. The sheath differs in its upper and lower portions. Above the mid-point between the umbilicus and the symphysis, the muscle invested by the aponeurosis of the lateral muscles—the external oblique and the anterior split of the internal oblique, and posteriorly by the posterior split of the internal oblique and the transversus. Below the mid-point the aponeurosis of the three flat muscles pass entirely in front of the rectus leaving the posterior part of the muscle devoid of aponeurosis. This termination of the aponeurotic layers is called the linea semicircularis or fold of Douglas.

The rectus is separated from the right and left halves by a band of dense fibrous tissue called the linea alba. The linea alba is bisected by the umbilicus.

The outer margin of the rectus is called the linea semilunares.

The fibers of the external oblique muscle arise from the ninth, tenth and eleventh ribs, descend downward and forward. Its lower fibers form into a tendinous sheath that condenses into the inguinal ligament and a small mesial portion reflected as the lucunar ligament. Aboue the crest of the pubis, there is a deficiency which forms the *external inguinal or subcutaneous ring.* Arching intercrural fibers bind the aponeurosis together.

The internal oblique muscle lies internal to the external oblique. Its fibers run perpendicular to those of the external oblique. It arises from the lateral half of the inguinal ligament and the interior two-thirds of the iliac crest and from the lumbodorsal fascia and runs superiorly anteriorly and mesially. The uppermost fibers insert into the lower ribs, the middle, above the semicircular line split into two sheaths which enclose the rectus abdominis muscle. Below the semicircular line, the sheath blends with

the external oblique and transversus to form the anterior sheath of the rectus. The lowermost fibers arch over the spermatic cord to blend with the transversus and form the falx inguinalis (conjoined tendon).

The transversus abdominis lies deep to the internal oblique. It arises from the lower six costal cartilages, the lumbodorsal fascia, the iliac crest and the lateral third of the inguinal ligament. The direction of its fibers is towards the linea alba. Its aponeurosis above the semicircular line runs posteriorly to its rectus and anteriorly below. The lowermost fibers turn downward mesially and insert into the crest of the pubes as part of the conjoined tendon.

The transversalis fascia lines the entire abdominal cavity and lies superficial to the peritoneum. It lies deep to the transversus abdominis muscle and helps to reinforce unprotected areas, therefore, being stronger below the semicircular line. It attaches itself to the crest of the ilium, the outer half of the inguinal ligament, the lacunar ligament and the crest of the pubis.

The peritoneum, the innermost lining of the abdominal cavity, is separated from the transversalis fascia or endoabdominal fascia by a layer of fat. This fat layer varies in thickness and contains many blood vessels. It is especially thick near the inguinal rings and the balance of the pubic area. Because of this, the mid-line, para median and herniae incisions should not be carried too close to the pubic bone because large veins are present in this preperitoneal fat near the pubes. This preperitoneal fat is often pushed into the inguinal canal in rupture descent and when found it serves as a guide in locating the distal end of the peritoneum which always lies proximal to it. It therefore indicates the degree of the journeying of the sac.

The peritoneum can be easily stripped from the transversalis fascia except where the two fuse at the internal ring. The peritoneum does not reach the inguinal ligament but turns back before reaching it. Between it and the inguinal ligament lies a layer of fat in which is imbedded the inferior epigastric artery and the termination of the external iliac artery. These two vessels therefore can be ligated through an abdominal incision running superiorly and parallel to Poupart's ligament and without entering the peritoneal cavity.

Extending downward from the umbilicus, the peritoneum is ridged by three remnants of foetal structures—the urachus in the center fold, and the obilterated umbilical arteries in the lateral ridges. These ridges form fossae and are of surgical interest.

The external fossa lies lateral to the inferior epigastric artery and when the peritoneum is removed the internal abdominal ring is exposed with the vas deferens and the spermatic vessels converging toward it.

The middle inguinal fossa lies between the inferior epigastric artery laterally and obliterated umbilical artery mesially. This is a weak area in the abdominal wall for it is not covered by the internal oblique or transversus abdominis muscle. This is the site of direct inguinal herniae. The direct herniae therefore do not traverse the entire inguinal canal, but enter the canal at its outlet close behind the abdominal ring and mesial to the inferior epigastric artery.

The internal inguinal fossa lies between the obliterated umbilical arteries laterally and the urachus medially. This is also known as the supravesical space. Because of the rectus abdominis muscle and the conjoined tendon, this space is well protected and very rarely is involved in a hernia.

The blood supply of this area is determined by the inferior epigastric artery which arises from the external iliac artery about 1 cm. superior to Poupart's ligament. The artery soon runs obliquely upward and mesially in the properitoneal fat along the medial margin of the internal ring and then to the internal surface of the rectus abdominis muscle which it ascends.

The iliohypogastric nerve, a branch of the first lumbar nerve, runs forward in the anterior abdominal wall near the superior margin of the iliac crest where it divides into its hypogastric and iliac branches.

The ilioinguinal nerve enters at a lower level and after crossing part of the iliac fossa enters the inguinal canal. It runs anteriorly beneath the aponeurosis of the internal oblique immediately above Poupart's ligament and emerges from the external ring and then sends fibers downward and lateralward into the penis scrotum and medial and anterior aspects of the thigh. When this nerve is injured in a McBurney's type of incision for appendicitis, the structures supplied by it lose their nourishment and a hernia may result—the area also loses its sensory quality and feels numb.

The inguinal canal is approximately 1½ inches long. It begins at the abdominal (internal) inguinal ring and ends at the subcutaneous (external) inguinal ring. The internal ring lies about one-

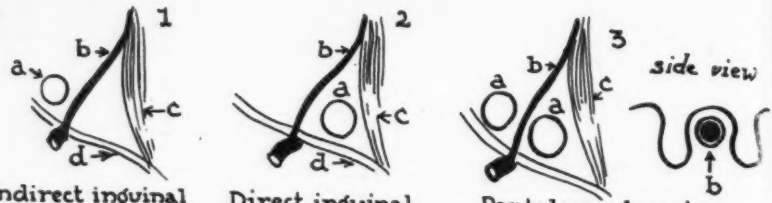



Fig. 2. a. Hernia bulge; b. Episgetric artery; c. Rectus abdominis; d. Poupart's ligament.

quarter of an inch above the middle of Poupart's ligament. The external ring lies in front of the lateral portion of the pubic bone.

One can correlate from the foregoing anatomy that *the strength of the anterior wall of the inguinal canal becomes weaker from the lateral to the medial portion* and the posterior wall becomes weaker from the medial to the lateral portion—the reverse of the anterior wall.

*The internal or abdominal ring* is an opening in the transversalis fascia with a diameter of about 1 cm. It lies about a quarter of an inch above and in the middle of Poupart's ligament. It lies on the lateral margin of the inferior epigastric artery. It transmits the spermatic cords and its components in the male and the round ligament of the uterus in the female.

The internal spermatic fascia (transversalis fascia) forms from the circumference of the ring a thin funnel-shaped membrane which is prolonged on the cord around its entire circumference.

*The external or subcutaneous ring* is more properly a triangular space. Its base is formed by the crest of the pubis and its sides by a split in the aponeurosis of the external oblique muscle. The fibers of the external oblique are bound together by cross fibers called intercolumnar fibers.

*Hesselbach's Triangle (See Fig. 2)* is the space bounded by the lateral margin of the rectus abdominis to the median side, inguinal ligament below, and the inferior epigastric artery laterally.

**The Subdivisions of Inguinal Hernia**

*Indirect Inguinal Hernia:* The sac enters the inguinal canal through the internal ring and may not leave through the external ring after following the inguinal canal (incomplete indirect inguinal hernia) or after traversing the canal may enter the scrotum after passing through the external ring (complete indirect inguinal hernia). The hernial sac lies lateral to the inferior epigastric artery.

*Direct Inguinal Hernia:* The sac enters the lower portion of the inguinal canal through Hesselbach's triangle and leaves through the external ring. The sac lies medial to the inferior epigastric artery.

*Pantaloon Hernia:* This type of hernia is a combination of indirect and direct inguinal hernias—the inferior epigastric artery lying between the two hernial sacs.

*Sliding Hernia:* This hernia is caused when the bowel and sometimes the bladder slides out into the hernial opening (internal ring) but not into the hernial sac. The bowel is then a part of the hernial sac. These hernias may also contain only preperitoneal fat and neither bowel or bladder.

**Examination of the Patient for Inguinal Hernia**

Have the patient stand before the examiner (who is seated on a low stool) in a good light and strip from the waist down, the feet slightly apart, and the body bending a little forward. Look at the inguinal regions remembering that the use of the finger in the inguinal

canal and having the patient cough is to be condemned as the impulse produced is caused by the descent due to the contraction and straightening out of the transversus and internal oblique muscles.

These muscles, when contracting, straighten out and come down covering Hesselbach's triangle and then running parallel to Poupart's ligament protect this area like a sliding valve. Cutting the ileoinguinal nerve in a McBurney incision for appendicitis stops the inervation of these muscles and therefore is conducive to hernia formation. This bumping of the muscles on the examining finger inserted through the external ring has too often been interpreted as the head of the bowel coming down through the canal when the patient coughs.

Also, one must remember that *in an indirect hernia the sac rarely reduces but the contents do.* That in a direct hernia both sac and contents reduce.

Therefore, *have the patient strain (increase intra-abdominal pressure) and observe the development of the bulge.*

If the bulge is medial and superior to the spine of the pubes, (femoral hernias are always lateral) it is an inguinal hernia. If the bulge is sausage shape and lateral to the inferior epigastric artery it is an indirect inguinal hernia, complete if the viscus extends into the scrotum and incomplete if not.

If the bulge is more round and medial to the inferior epigastric artery, it is a direct inguinal hernia.

Both indirect and direct (pantaloon) hernias can exist at the same time.

### Operation for Repair of Indirect Inguinal Hernia

Whether one is following the technique of Bassini, Ferguson or anyone of the other multitude of authors and surgeons after whom their technique is named, only a few facts are pertinent and practiced by all, namely, obliterating the sac and reducing the size of the internal ring.

So, therefore, we proceed from our anatomic and physiologic knowledge.

Sutures used: One must bear in mind that a sewing together of tissues only facilitates their growing together; tissues can fall together and also grow.

One can read of pages of writing describing the various suture material used in the past and at present, but in this discussion I am only going to mention the use of those materials which have given me most satisfactory results.

1. Plain catgut, size 0—for tying off bleeders.
2. Chromic catgut, size 2—for suturing fascia.
3. Silk, medium—for suturing fascia can be used throughout.
4. Mercerized cotton—this is coming more in use at the time of writing as it presumably is less irritating to the tissues.
5. Stainless steel wires, gauge 30—for suturing fascia.

### Preparation of the Skin

The cardinal principle is to cleanse the skin over an area far beyond the anticipated area.

It seems that many surgeons believe that only the actual field of operation should be prepared or that they are afraid of using too much antiseptic material. Anyhow, one cannot be too careful, so prepare enough. McNealy prepares from the sternum to the mid thighs and I think that that is a good idea.

The skin over all this area should first be carefully shaved and then scrubbed with tincture of green soap for five minutes—the patient already on the operating table and going under the anesthesia. Following this the soap should be removed first by alcohol and then ether after which the area should be painted with alcoholic solution of iodine 2% and then washed off with alcohol to prevent iodine burns.

The area is then draped with towels and sheets and the surgeon is ready to make his incision.

### The Incision

One should always bear in mind that a good cosmetic effect is desirable. Should a single or bilateral hernia operation be performed, the same anatomic rule should always be applied, the scars will always be symmetrical and good appearing.

From the anterior superior iliac spine draw an imaginary line to the umbilicus and divide it into thirds. One inch below the junction of the lateral and medial thirds make an indentation by pressing and rotating the point of a Kelly artery forceps into the skin.

Then locate the spine of the pubes with the finger and make a similar dot on it.

Connect these two dots by an imaginary line and cut along it (See Fig. 3). The lower end of the incision should not be carried down any farther because there one runs into fatty tissue that is quite vascular and which readily bleeds.

Some surgeons make cross scratches

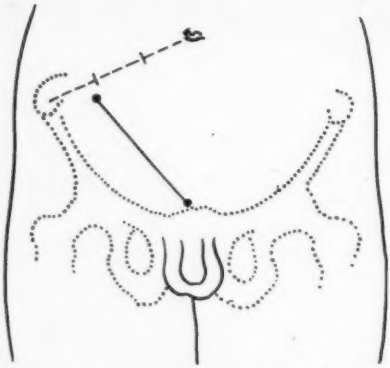

Fig. 3. Location points for incision in hernia operation.

with the point of the knife across this imaginary line so that in suturing afterward the cross scratches can be approximated and the skin will not be unevenly approximated. This procedure is a matter of individual choice and skill.

**Surgical Proceedure**

The incision is carried down to the glistening fibers of the aponeurosis of the external oblique muscle. All bleeding is clamped and then tied off (See Fig. 4).

Some surgeons then take a piece of gauze and diligently wipe the aponeurosis of all fat and blood vessels so that it is clean and white and glistening as though they were going to solder something to it. I mention this only to condemn it. This fascia receives its blood supply from the fatty fascia, Scarpa's and Camper's, above it and from the muscle tissue below. Removing the fatty tissue removes its blood supply and injures its repair. The fatty fascia does not interfere with the operation, so leave it alone.

Locate the external ring and place two Allis clamps on it so that one can cut between them.

Take a new scalpel and nick the aponeurosis in the weak area, as can be observed by the separation of its fibers, at the upper end of the incision. Do not use the scalpel further but use a scissors by inserting its blades into this opening and separating the fascia from the underlying muscle by opening the blades and pushing downward. After the fascia is free, insert the scissors so that the blades catch the aponeurosis between them and push the scissors downward toward the external ring between the Allis forceps in a separating and non-cutting manner so as not to cut the ilio inguinal nerve which will appear cross ing over the inguinal canal beneath th aponeurosis.

After completing the incision, lift u the flaps of the aponeurosis with Alli forcep and separate them from the cana structures (See Fig. 5).

To lift the cord and its structures fron its bed, use a Rochester curved forcep and insert at the lateral margin of th external ring carrying the point down ward and medialward against the spin of the pubes and lifting up the cor structures. A tape is placed beneath th cord structures and the forceps is re moved. The cord structures are elevate and drawn lateralward exposing the floo of the canal and the internal ring. If th skin incision had not been carried dow quite far enough to facilitate this move ment, use a retractor and pull downward rather then cut farther through the vas cular fatty tissue.

The sac is to be sought at the upper anterior-medial border of the cord struc tures. This is the only location where it can be found. At this position th cremasteric and internal spermati fascia are opened by longitudinal inci sions until the sac is located. On the front of the sac is the only place where free peritoneum can be found. The bladder is always on the under side o the peritoneum. *In examining the sac always open from above downward.* Als avoid unnecessary pulling on the stump of the sac as the bladder may then be pulled up into the operative field and ligated with the stump resulting in un pleasant postoperative complications.

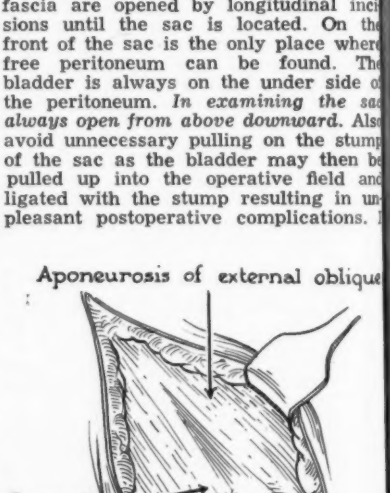


Fig. 4. Incision for inguinal hernia to aponeurosis of external oblique muscle.

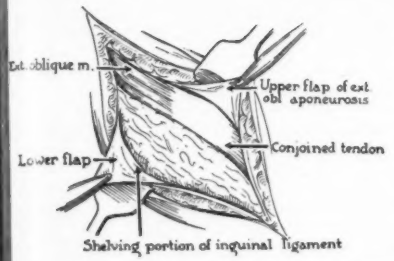


Fig. 5. Incision for inguinal hernia to conjoined tendon.

have seen so-called surgeons looking up and down and in and out of the cord structures for the sac as though it was playing hide and seek and thereby needlessly traumatizing tissue and wasting time because they did not know their fundamental anatomy.

The sac is to be thoroughly freed from the cord and blood vessels by gently wiping these structures away from the sac. The sac is then opened and its contents, if any, are placed back into the abdominal cavity carefully using either a ring forceps, a Babcock forceps, or the finger itself.

The next step consists of tying off the sac. This is accomplished, after reducing its contents, by gently pulling up on the sac and then twisting it around down to its base thereby eliminating any space that might retain extraneous content (See Fig. 6). After this twisting has been completed, insert a transfixion suture through the base and tie, using chromic # 2 or silk. If done properly, the sac is then ligated at the base of the inferior epigastric artery and after removing all redundent tissue, it is pushed up behind the artery and left there. If the sac is long and extends into the scrotum, from which it is difficult to remove it, this distal portion need not be removed but may be tied off and left alone. It rarely causes a hydrocele and leaving it alone will save injury to the testicle. After the sac is invaginated, bring down the transversus muscle over the opening down to the conjoined tendon and Poupart's ligament.

One can readily see that this procedure has removed the infundibulum. It has been common practice, after ligating the stump and removing the sac, for surgeons to transplant the stump up under the transversus. This accomplished nothing. The infundibulum has been removed, which is what we started out to do. There is nothing left to do anything with, so transplanting the stump is meaningless and valueless.

The next and one of the most important steps is to make a new internal ring or rather make the old internal opening smaller. One must always bear in mind at this point that the opening left must be sufficient so as not to strangulate the spermatic vessels and cause great discomfort to the patient and damage or death to the dependent tissues. To determine what size the internal ring should be, a rule has been promulgated—for those who like to go according to rules—and it is simply this: Flatten the cord and then place the suture so that the diameter of the new internal ring will be one-half that of the flattened cord.

**Suturing**

In sewing hernial fascias, one must bear in mind that sewing only splints them together until they become fixed.

I have at this point used to good advantage either stainless steel # 30 gauge or medium silk suture with excellent results. It is my policy when using chromic sutures, to require the patient to remain in bed longer, preferably for three weeks after the operation. I have no confidence in an absorbable suture after ten days and I therefore consider that the tenth day as the weakest day for the tissues. Each day thereafter the tissues become stronger.

In suturing the floor of the canal a mattress type suture is employed. It

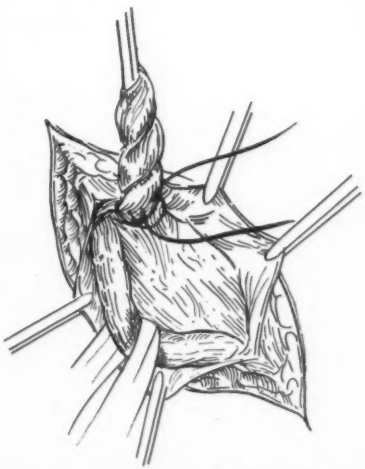

Fig. 6. Tying off the sac in inguinal hernia.

begins in the reflexion of Poupart's ligament at the upper end, traverses through the fascia of the internal oblique and transversus, sometimes forming the conjoined tendon, and then back through reflexion of Poupart's ligament but not in the same lateral plane as the first stitch. Tying this stitch makes the internal ring. Two objects must be looked for in making this stitch, one, not making the opening too small and two, not injuring the inferior epigastric artery and vein which lie beneath the conjoined tendon at this point.

All writers on hernias describe their particular operations almost like the above to this point, and the operation after their name begins from here on. But from here on, there is nothing more to do. The infundibulum has been removed, the ring opening fixed—all that is left then is to replace the fascias as they were upon opening them.

The internal oblique and transversalis muscle are attached with the same type mattress suture prescribed in making the new opening to the reflection of Poupart's ligament making interrupted sutures. When completed, this makes the floor of the inguinal canal. The sutures at the two previously placed Allis forceps determine the size of the external ring. This too must allow free movement of the cord.

The tape holding up the cord is removed and after testing the ability of the cord to move in and out of the new internal ring, to avoid constriction, it is placed on its new floor.

The fascia of the external oblique is then sutured together interrupted, using stainless steel # 30 gauge silk or chromic # 2 sutures.

The final suture does two things: namely, suturing together the fascias of Scarpa and Camper to each other and the skin. It is of utmost importance that these fascias be reunited because between them lie the blood vessels that supply such an important amount of blood that keep the fascias alive.

The vertical mattress type suture is here again employed. Using silk, cotton, or silkworm in a Keith or hand sewing needle, a through and through stitch one-half inch from the medial margin of the incision goes through the skin, Camper's fascia, Scarpa's fascia, then crosses over and comes out about one-half inch of the skin margin passing through Scarpas', Campers' fascias and then the skin. It is then reinserted through the edge of the lateral margin of the skin on out through the edge of the medial margin of the skin so when tied the two skin edges are brought together. All sutures are placed before being tied to facilitate inserting the sutures.

---

# Treatment of Chronic, Suppurative Otitis Media

*By* I. W. VOORHEES, M.D.,
*New York City*

A summary of the treatment of chronic suppurative otitis media is this:

(1) Cleanse the ear with warm, normal saline solution.
(2) Dry thoroughly with cotton.
(3) Destroy granulation tissue with silver nitrate stick or chromic acid bead.
(4) Blow in iodized powder 2 or 3 times weekly.

No more water should be used. Many cases of chronic draining ears can be cured without operation.

*Iodized Powder*

The iodized powder may be made up by the pharmacist:

℞ Iodine crystals grs. V
Potassium iodide gn. ss
Alcohol (95 percent) M. XV

These agents are rubbed up until thoroughly mixed. Then one adds boric acid powder to one ounce. The mixture is spread out on waxed paper and allowed to dry. The alcohol evaporates, leaving behind fine flakes of powder which can be placed in small wide-mouth bottles. The powder is applied by using a small caliber rubber tubing about one foot long. A metal mouth piece at one end is convenient to hold between the teeth of the physician. The other end of the tubing is thrust into the powder until an estimated sufficient amount is contained in it. The powder is blown into the canal, then a small cotton wound applicator is used to push the powder until it covers the area in a thin film.

140 East 54th St.

# A Synopsis of a Clinical Study of Milk Intolerance

By P. A. McLENDON, M.D., F.A.A.P.* and DOROTHY S. JAEGER, M.D.**
*Washington, D. C.*

Dorothy S. Jaeger, M.D.

DURING the past several years, we have been interested in a group of children, usually in the latter part of the first decade, who have presented themselves with complaints which have established what we believe to be a clearly defined clinical entity. None of these children have the allergic manifestation of eczema. We were very dubious of our interpretation at first, but clinical improvement when milk and dairy products were eliminated has thoroughly convinced us that there is a clinical entity of milk intolerance. Because the public, and particularly parents, have been taught the wonderfully good qualities that milk possesses, it has been difficult to divert from the usual practice of recommending a "quart of milk a day." Many of the mothers are reluctant to eliminate milk and dairy products from the diet.

### Symptoms

This group of children presents numerous and varied symptoms which are sometimes difficult to evaluate. *Constipation* is the most common complaint. This usually starts in infancy, and the history elicits many formula changes in an effort to correct the constipation. The stools are usually pale and dry. However, *recurrent diarrhea with pain* occurs in twenty-five percent of the group. Anorexia is the next most common symptom. The majority of the children when first seen by us are receiving tonics to improve their appetites and pallor. *Abdominal pain*, with *fulness* and *distention*, is a frequent complaint. These youngsters are irritable and restless, particularly in their sleep, yet they have *little energy* and tire very easily. Often enuresis and frequency during the day are present. Fifty percent of the children have large red tonsils with no exudate present, and complain of repeated colds, upper respiratory infections and asthmatic bronchitis. During the second and third years there is an increase in respiratory complaints.

The characteristics of the history are:

1. Family history of some form of allergy.
2. Excessive milk intake during later months of gestation.
3. Ninety percent on cow's milk in some form since birth.
4. Constipation and colic, with frequent formula changes.
5. Usually some improvement when solid foods were added.

Physical examination reveals a pale, poorly nourished, languid, apathetic, potbellied youngster with a general lack of muscular tone. Fecal masses are palpable in the abdomen, the mucous membranes and upper respiratory tract are congested, and the tonsils are large. Firm shotty cervical glands are usually present. Occasionally scattered crepitant and sibilant rales are heard. There is a foul odor to the breath and coated tongue in some instances. About ten percent have geographic tongue which disappears when milk is stopped, to reappear when it is given. Canker sores, too, may be present. Blood may show mild anemia, if any, with sometimes an increase in eosinophilia.

### Case Histories—Case 1

The history of three typical cases is given:

F., a white boy, aged seven years, complained of frequent abdominal distress, abdominal distention, recurrent diarrhea, frequent colds, nasal obstruction, and was out of school half the time. He had a family history of allergy. His mother drank large quantities of milk while pregnant. The baby was weaned at two months because of vomiting, only to encounter far more difficulty with formula. Several attacks of persistent diarrhea occurred during infancy. Physical examination revealed

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pallor, poor muscular tone and tissue turgor; marked lassitude and dull facies; pot-belly with increased tympany; tonsils large and red! nasal mucous membrane pale and boggy (allergic); blood eosinophilia one percent, nasal eosinophilia none and skin test negative to whole milk. Milk was omitted with marked improvement to date. He has been in bed with a respiratory infection once during the past two years. Other abnormal physical findings have disappeared. There has been no recurrence of diarrhea.

**Case 2**

H. E., a white boy, twelve years old, complained of lassitude, anorexia, and repeated colds with bronchitis. Physically he was a poorly nourished, undersized boy with marked apathy. The abdomen was distended and tympanitic, and there was poor tissue turgor and pallor. The history was one of marked difficulty with complemental feedings of cow's milk, gas, green stools, and excessive crying. At eight weeks, diarrhea occurred which cleared up only after using a synthetic milk. While in Switzerland, he developed pertussis, and was placed on a restricted milk intake, gaining ten pounds; an outstanding accomplishment, when viewed against previous or succeeding periods. This was followed by attacks of abdominal pain, and periods of marked anorexia culminating in an appendectomy at the age of eight years. This was followed by four years of anorexia, lassitude, lack of usually expected weight gain, despite the fact that milk was forced. He was skin tested and the asthmatic attacks were stopped by desensitization to dust and other positive reactors. No positive reactions to foods were found, no eliminations made despite continued alimentary and nutritional symptoms and despite an eosinophilia of two percent to eleven percent in several blood counts. Remarkable improvement has followed the elimination of milk. Alertness, appetite and activity are all that can be desired. In two years, he has increased fifteen pounds in weight with an equal growth in stature.

**Case 3**

H. A., a white boy, aged five years, suffered from constipation and frequent attacks of asthmatic bronchitis. Constipation dated from infancy, with large hard grayish-white stools, necessitating daily enemas. The stools were foul, but so dry that they crumbled and would barely soil one's hands. Colic with gas, distention, crying and restlessness continued for many months. Formula changes were legion. Several severe colds with bronchitis occurred in infancy, becoming more numerous and severe as time passed. This child was markedly pot-bellied with excessive foul gas, pallor, and poor musculature. The breath was foul and the tongue markedly geographic. Cow's milk was eliminated with immediate improvement in all particulars except the asthmatic bronchitis. This deserves further investigation. The geographic tongue cleared and was deliberately reproduced by giving a small amount of milk.

**Management**

The management of these patients is relatively simple once the mother can be convinced that milk can be safely eliminated. Milk and all milk products are eliminated.

If the child is over two years, usually no milk substitute is used. If the diet is well balanced with vegetables, meat, eggs, and fruits, usually no extra calcium is necessary. However, if teeth and bones are not well formed, calcium lactate or phosphate may be given, or candy wafers of calcium di phosphate, in the case of older children. Diet usually is supplemented with vitamins D and B. In children under two years, where milk due to the lack of variety of foods is an important factor, we use milk substitutes, such as are used in cases of eczema due to milk sensitivity. A popular soy-bean liquid, put out by an evaporated milk company, contains enough calcium. This is used with equal amounts of water as a full strength solution. A synthetic milk substitute put out by one of the leading infant food companies can also be used. Solid foods are given in larger quantities to these children.

**Summary**

In conclusion — milk is an ideal food for most infants and children, but any good thing can be overdone, and the physician should recognize this "intolerant minority" and protect it from the over-enthusiasm of nutritionists, dentists, and dairy interests.

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Receive thankfully all that physiology or chemistry or another science can give us, yet let us still hold that, that alone is truth which is proved clinically, and that which is clinically proved needs no further evidence.

—Sir James Paget.

# Intravenous Bismuth Therapy

*By* A. P. HUDGINS, M.D., *Charleston, W. Va.*

BISMUTH is well established as an antiluetic agent. Other uses for this drug are being presented, however, which are making it assume a larger role among the important therapeutic agents.

1. Vincent's infection[1] has been found to respond favorably to bismuth therapy. Some consider it a treatment of choice in the spirochetal infections, either of the mouth or of the throat, due to the low toxicity of the bismuth. 2. Bronchial infections: It has been reported that certain forms of bronchitis[2,3,4], especially if associated with bronchiectasis, responded well to bismuth therapy. More recently, reports have been presented using this drug in the commonly found "post-influenzal" bronchitis or tracheitis with cough. 3. Tonsillitis: Several reports have been given concerning the use of bismuth; some saying that the spirochete was the cause of a larger number of infections than had previously been thought. Monteiro and Silcox[3] advised the use of bismuth in cases of tonsillitis, stating that the streptococcal infections respond better than other types. 4. Malaria: Bismuth has been advised for use as an auxiliary method of treatment in malaria[5], particularly by those who have had difficulty in overcoming the chills and sweats following the therapeutically administered malaria in the treatment of syphilis. 5. Juvenile warts (Verruca Plana Jevenilis[6]. 6. It is interesting to observe that if the bismuth preparations have been found to be effective when given systemically in the treatment of the streptococci and other organisms which are found in the throat, there appears little reason to doubt that some results may be obtained when this agent is used against similar organisms invading other organs of the body; for instance, the kidneys. Manteiro and Silcox[3] reported very gratifying relief, not only from the objective symptoms of inflammation, but also relief of pain when this drug was given in acute laryngitis and tonsillitis.

The purpose of this paper is not to go into detailed discussion as to the above mentioned uses of the drug, but rather to report the findings and observations on the intravenous use of bismuth sodium tartrate* as an improve method of administration.

This suggestion comes as a result of observations and studies following the administration of over 1200 injections of aqueous sodium tartrate, carefully given to more than 100 patients over a period of 7 years.

The advantages of the drug administered in this way may be listed as follows: 1. The amount of available bismuth is increased. By the intramuscular route, some deposits of bismuth are not absorbed and are left in the tissues, often being encapsulated. Because of this, the amount of bismuth actually available is variable. When bismuth is given intravenously the entire dose is available. 2. Rapid effect. When any drug is given intravenously it reaches the various parts of the body more quickly; in this way having quicker therapeutic effect where needed. 3. The intravenous route is less painful than the intramuscular route. It is a well known fact, especially in clinics, that some patients will not return for continued treatment as regularly as they should, when the visits mean pain to them. Any method which encourages more consistent return (better case-holding) should be considered; especially in those cases where prolonged treatment is so important. Bismuth sodium tartrate may be given intravenously, using a very small hypodermic needle (25 gauge), and there are no masses or lumps to annoy the patient later.

The disadvantages of intravenous bismuth therapy which have been given should be listed: 1. "Too toxic." The damaging effect on the kidney tissue is the main source of concern. In this series, using aqueous bismuth sodium tartrate, this has not been found to be true. Results from 1200 doses, given to 100 patients who have been observed over a period of seven years, does not bear this out. No symptoms were presented and frequent, repeated urinalyses were negative for albumen during treatment and after the series of injections had been completed. 2. Bismuth by intravenous method, it is contended, does not give as sustained effect as the intramuscular injections. Then, by this same argument, why not give the arsenic preparations intramuscularly? Or why attempt to give any drug intravenously if its effect is too temporary to be of therapeutic value. 3. Care must be taken in selecting the cases for intravenous

*Bismuth Sodium Tartrate, Aqueous (Searle) was used in this work.

bismuth, as the rapid or drastic therapy is to be strictly avoided in cardiac, vascular and certain other cases of undetermined status of syphilis. This, of course, is a warning and a contraindication to any rapid or intravenous therapy, whatever drug is used in the treatment of syphilis; whether it is arsenic or bismuth. It is a contraindication to any rapid method of treatment of syphilis until the complete status of the disease has been determined.

Intravenous aqueous bismuth sodium tartrate presents a more available, less painful method of safely giving a drug which is being used more and more for a wider range of conditions.

It is wise to consider the reported toxic effects of bismuth: These reactions have been noted whether the drug is given orally, intramuscularly or intravenously. Generally speaking, observers consider reactions, including albuminuria rare. The reports of Grund[7], Schamberg and Wright, Harrington, Levadite and others on the toxicity of bismuth, referred to the intramuscular route. Death has been reported from intravenous bismuth (Magnus) just as death has been reported from other intravenous therapy. All of these cases should act as a constant warning against a careless or too routine attitude toward intravenous therapy.

When any form of reaction is presented, the symptoms may include salivation, loss of appetite, gastric distress, nausea, vomiting, skin reactions or aching of the teeth or jaws.

Idiosyncratic or allergic reactions to bismuth, though rare, are not unknown and may be manifested by skin reaction of various types. Cases of agranulocytic angina have been reported. According to Stokes, bismuth preparations must be used with caution in nonsyphilitic hepatic disease. A hemorrhagic diathesis of any type is also thought to present a contraindication to intensive bismuth therapy. The administration of the drug should be stopped at the first sign of cutaneous irritation.

In this series, there was occasional nausea, rarely vomiting. The most frequently presented complaint was aching in the jaws and teeth. If this pain persisted in "one tooth," dental examination was advised. Holding hot water in the mouth during or following treatment was found to be effective in reducing this discomfort.

1200 doses of aqueous bismuth tartrate have been cautiously given intravenously to 100 selected patients over a period of 7 years. These patients have been repeatedly observed and examined. No serious reactions have been found.

It is, therefore, the opinion of the writer that treatment with a bismuth preparation is not injurious if the necessary precautions are taken.

In this series, a three percent, aqueous bismuth sodium tartrate was given intravenously; one c.c.— later 2 c.c. —weekly and recently, twice weekly. . . and was well tolerated.

**Therapeutic Results**

In this series, bismuth was given almost exclusively for syphilis. The results have been very gratifying. One patient, in particular, requested "that white, tasteless medicine" because her bone lesion healed better, according to her own observation.

Bismuth, however given, is to be considered only as a supplement to arsenical therapy.

In the cases observed, when bismuth was given for other conditions as noted (tonsillitis or bronchitis), the patients were well pleased with the results.

**Summary and Conclusions**

1. Aqueous bismuth sodium tartrate may be safely given intravenously in 1 c.c. to 2 c.c. doses at 3 to 7 day intervals.

2, Bismuth therapy is thus made less painful; the drug is made more available and more rapid in action.

3. In a series of 1200 injections to 100 patients, no toxic reactions of significance were noted. The reactions reported were, chiefly, aching in the teeth and jaws, occasional nausea, vomiting very rarely.

4. The literature presents bismuth as a method of treatment, not only for syphilis, but also in other spirochetal infections, tonsillitis, bronchitis, (certain forms of bronchiectases and "post-influenzal" bronchitis), Vincent's infections, juvenile warts (Verruca Plana Juvenilis).

Professional Bldg.

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# Differential Diagnosis of Pruritus Vulvae

*By* KARL JOHN KARNAKY, B.A., M.D.,* *Houston, Texas*

THE four most common causes of pruritus vulvae, that are often misdiagnosed are in the order named: Trichomonas vaginalis, Monilia albicans, (mycotic), senile vaginitis and diabetes mellitus.

**Differential Diagnosis**

*Trichomonas vaginalis* is diagnosed by the history of pruritus, which increases just before, during and after the menses. Also *this is the only discharge that scalds the perineum.*

Microscopic: Trichomonads swimming around in warm normal saline solution, viewed under low or high power of the microscope.

*Monilia albicans* is diagnosed by the history of pregnancy or suspected pregnancy. Amenorrhea is associated with pruritus vulvae during the child-bearing period. Itching is worse during the night. History of a cheesy discharge with a yeast odor.

Microscopic: In the fresh smear made for Trichomonas vaginalis there is seen floating on top of the smear many bush-like areas. In the methylene blue or Gram's stain, the Monilia sticks with buds here and there are seen.

*Senile vaginitis* is found in elderly patients past the menopause, surgical castrates and some patients with oligo, hypomenorrhea and amenorrhea. Atropic vaginal mucosa is seen on carrying out a specular examination.

Microscopic: Not necessary but one will see leucocytes and round cells; if stained by placing a small amount of Lugol's solution on the fresh smear, one sees a deficient or complete lack of glycogen in the vaginal cells.

*Diabetes Mellitus* is diagnosed by the history of diabetes. Bluish areas on both labia, that itches more after bathing or in the summer.

Microscopic: No evidence of any of the above fungi seen in fresh or stained smear.

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326 Medical Arts Building

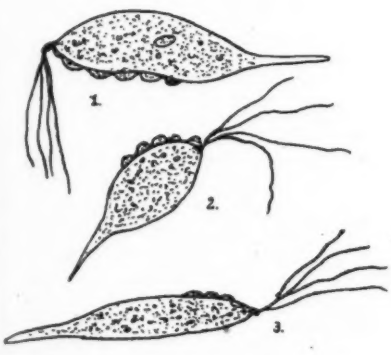


Fig. 1. Some of the forms trichomonas vaginalis may assume.

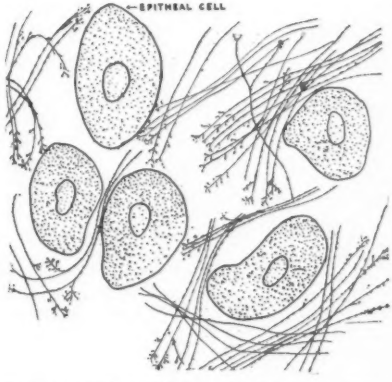


Fig. 2. Monilia albicans, fresh smear, low power.

## On Traveling

*It's a good, safe rule to sojourn in every place as if you meant to spend your life there, never omitting an opportunity of doing a kindness, speaking a true word, or making a friend.*—JOHN RUSKIN.

# Venereal Lesions of the Male Genitals

*By* GORDON G. ALLISON, M.D.*, *Atlanta, Georgia*

**This article, which deals with the differential diagnosis of venereal lesions of the male genitals, is based on experiences in private practice and in the Venereal Disease Clinic, City of Atlanta.**

NOWHERE in the various branches of medicine are errors so frequently made as in the correct diagnosis of lesions appearing on the genitalia. Accountable for such failures are lack of interest in venereal ulcers, brevity of description of all the lesions by authors of text books, insufficient pathological investigation, and unfamiliarity with concomitant multiple venereal infections and the resultant modification of clinical appearance of the area under investigation. Nowhere in medical practice is a change for the better more imperative than in venereology.

For many years, our public health departments have placed emphasis upon syphilis. The present war brought gonorrhea into focus. Stress has been laid on serological testing for syphilis and on culture methods of Neisserian identification. What emphasis has been placed upon dark field examinations, and who among the private practitioners has laboratory facility for serial cultures on the "run of the mill" gonorrheic? In what states is the reporting of chancroid, lymphogranuloma venereum and granuloma inguinale required? How many clinicians or public health officials are able to differentiate or diagnosticate the latter diseases?

The relative frequency of occurrence of the various venereal diseases may be indicated by the number of new cases admitted to the Venereal Disease Clinic of the city of Atlanta, Georgia, during the year of 1943:

| | |
|---|---|
| syphilis | 5280 cases |
| gonorrhea | 959 cases |
| chancroid | 254 cases |
| granuloma inguinale | 94 cases |
| lymphopathia venereum | 69 cases |

The United States Public Health Department reports 567,888 new cases of syphilis and 276,768 new cases of gonorrhea for the year 1943. As one considers the man-hours lost and the disabilities produced by venereal disease, one is compelled to place interest in this subject on a par with that in tuberculosis, heart disease, glaucoma, and neoplastic diseases, if he is truly interested in the nation's health and welfare.

### Sulfonamide Masking

Unfortunate for the race is it, that the early symptoms produced by most venereal infections are mild, relatively free of pain, and harmless in appearance to the new victim. Often he is unaware of his malady and continues to spread his infection through promiscuous intercourse. Most white males recognize their early or first discharge from the urethra following invasion of the gonococcus. In the past relatively few females were infected during the incubation period of 3 to 5 days, but an ever increasing number of females will be infected in the days to come as this *incubation period is lengthened to periods of 2 to 4 weeks with sulfonamide prophylaxis.* Such reports are continually filtering out of army camps.

Likewise, sulfonamide therapy is rendering asymptomatic and unrecognizable many cases that formerly would have terminated in complete cure before resumption of coitus. Except for failure to culture the gonococcus in these asymptomatic cases, we may state, that cultural methods have given us more acumen and accuracy in recognizing the male gonorrheic. Chaos still prevails in detecting the infected female.

### Urethral Discharge Due to Chancre

A word of caution is pertinent with reference to all cases of urethral discharge. In our clinic during 1943, intraurethral chancres have been found in over 20 cases. Negative spreads and cultures do not exclude syphilis. Dark field examination may not be possible, but every case of gonorrhea or urethral discharge must be followed by serological tests for at least 2 months.

Lymphogranuloma venereum (Lymphopathia venereum) may be ushered in as a urethral discharge but no means of diagnosis of this has yet been devised. The subsequent bubo soon leads one to suspect this entity. Failure to find the gonococcus or the Treponema pallida should direct attention to the recognition of the trichomanad by smear or culture, after which all nonspecific discharging urethras should be explored by bougie and sounds, strictures being primarily responsible for these difficult to cure

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discharges. Every meatus after puberty should admit a 30 F. bougie. Meatotomy should be performed so that dilation to maximum caliber may be instituted.

### Diagnosis of Syphilitic Lesions

Syphilis produces many types of lesions on the male genitals. The usual site is on the penis, but the scrotum, pubes, and perineum may frequently share their soil with the spirochete. Although the single chancre is the usual type, the investigator must familiarize himself with multiple and unusual chancres, condylomatal, secondary papules, luetic folicles, and eczematoid encrusted sores. All these are dark field positive lesions, whereas the pseudo chancre redux, the late syphilides, and gummata are dark field negative. Biopsy of all these lesions is simple. Pathologists everywhere recognize luetic changes, so that nearly 100 per cent of such lesions may be diagnosed. Every lesion on the genitals should be examined by dark field. Biopsy gives a positive diagnosis when other methods fail. Blood examinations at times fail to confirm a diagnosis. The bubo of early syphilis does not suppurate, nor become very large, nor is it tender, and by dark field examination of aspirated fluid, one usually finds Treponema pallida.

### Chancroid

Chancroidal infections, fortunately unlike syphilitic ones, are painful in the male. The edges are undermined and ragged, the base dirty, gray, depressed, and irregular. Before cleaning a serpiginous sore, spreads are made from the undermined edge by transfer to a slide and stained with Sellars or Pappenheimers stain. The bipolar safety-pin-like bacillus is soon recognized. Inoculation of pus from an unknown lesion to the skin of the forearm will give contact ulcers in 3 to 5 days and thus aid in diagnosis. Cultural methods of identification of the streptobacillus are conclusive and easily performed at laboratories like those of the University of Georgia but not so easily done by the average technician. Acquiring skill in this technique is not so difficult. It is most desirable that more workers and laboratories soon attain efficiency in culturing Hemophilus Ducreii as well as Neisserian gonococci.

### Lymphogranuloma Venereum

Confusion of lymphogranuloma venereum with granuloma inguinale and with syphilis is quite common. Greater clarity could be attained by the omission of "granuloma" and the substitution of "pathia" in the term lymphogranuloma and by the recalling of a few salient characteristics. *Granuloma inguinale is primarily a chronic skin disease common to negroes.* It is caused by the Donovan body that can easily be recognized in spreads stained by the method of Dienst and Mortara. The pubo-genital-perinealanal region is the usual site of this infection; only very rarely is it found in other areas or in white people. Strictures of the urethra and rectum do not occur in extensive granulation tissue, even though the granuloma permits white and red hemorrhage and peripheral extension, and causes failure to heal, anemia, and death. Biopsy by pathologists capable of recognizing the Donovan body gives positive diagnosis.

In contrast, lymphogranuloma (lymphopathia) venereum is primarily a disease of lymph structures (not skin) common to both white and negro, but more frequent in the latter. It is caused by an elementary body or virus incapable of recognition by microscopy, and identified by culture of the virus in mice and egg yolk sacs plus positive Frei skin tests.

The primary lesion has never been identified by positive animal inoculations, though it is described as an evanescent papule on the penis or in the urethra. If acquired in the male by ormau coitus, the earliest lesion observed is the inguinal bubo which ultimately becomes multilocular, large, tender, and usually suppurative and slow to regress. A bubo of such qualities, unaccompanied by a penile or scrotal lesion, and (or) without evidence of tubercular infection, yaws, or similar entities, can be regarded as diagnostic of this disease. Ducrey infections have coexisting skin lesions. Bubos due to syphilis, gonorrhea, and granuloma are small, non suppurating, and painless. Biopsy frequently fails to give a positive diagnosis.

### Fusospirochetal Infection

Fusospirochetes may *per se* produce superficial lesions usually described as a balanitis. Symbiotically associated with other organisms, such as Hemophilus ducreii and Treponema pallida, while at the same time deprived of oxygen by a swollen prepuce, they cause rapid, extensive, destructive processes, described as errosive, gangrenous balanitis, which results in loss of much penile tissue. Spreads stained with gentian violet give positive diagnosis.

Dramatic are the results attained by the insufflation of zinc peroxide behind an edematous, non retractable prepuce. Afterwards, dorsal slit, or preferably circumcision of such an infected foreskin,

must follow in order to secure tissue for biopsy. Inclusion beneath and over of sulfanilamide or sulfathiazole crystals in the tightly sutured circumcised foreskin is conducive to rapid healing, provided the sulfonamides are retained by adequately dry dressings and simultaneous specific therapy is employed for other concomitant venereal infections.

**Herpes**

Herpes genitalis or Herpes Zoster does not often bring difficulty in differential diagnosis. Smears of such and other ulcerative lesions stained with Sellars Negri stain aid in identifying affections of pyogenic origin. Impetigo, furuncle, boils, sebaceous cysts, and other infections may thus be more readily recognized. Careful search elsewhere than the genital region invariably shows other lesions classified as skin or generalized systemic diseases.

Venereal warts (verruca) do not usually give as much difficulty in diagnosis as in treatment. Clinical appearance alone is usually sufficient.

The important point for all to remember is the repeated use of dark field examinations, spreads, cultures, and blood tests and if doubt persists biopsy will disperse confusion and sharpen the diagnostic acumen for subsequent recognition of similar lesions and for the discovery of malignancies in early, otherwise unrecognizable, stages.

To sum it all up, the practitioner in the field of Venereology, in addition to his acquired clinical skill and ability, must be a good explorer, detective, and criminologist of saboteur organisms who can suspect and ferret out each entity in every combination of venereal infections, the characteristics of which differ from those of any one entity when existing alone.

301 Grant Building, 44 Broad St., N.W.

[For pictures of syphilitic lesions, turn to the Pictorial Section.]

# A Quick and Efficient Treatment for Lupus Vulgaris

*By* FRANCIS E. PARK, M.D., *Boston, Mass.*

SOME thirty years ago, I became interested in a treatment, for superficial cancer of the skin, published in the *Medical Record* (New York). It proved so successful that I was led to try it on a case of lupus vulgaris of twenty-three years' duration. This case had been treated by the best dermatologists of Boston and New York, without any benefit.

At the time that this patient came under my care, the lupus was active over the entire face and the anterior buccal surface. The nose had been almost entirely destroyed. The disease was entirely cured by one treatment, and the entire surface healed over with a smooth cicatrix, and has never recurred. The patient is still living at the age of 80.

Since that time, I have treated many cases of lupus vulgaris, most of them of long standing, and in every case the lesion was permanently cured by one short treatment.

The method employed is simple and, if used with care, safe. Three ingredients are used:.

1. A saturated solution of potassium hydroxide,
2. A saturated solution of zinc chloride,
3. Powdered hydrastis canadensis.

**Technique of Application**

a. The area of treatment, which must extend for a quarter inch beyond the area of infection, is anesthetised with novocaine-suprarenin.

b. The healthy skin for at least an inch beyond this margin is protected by a layer of heavy petrolatum.

c. A paste made by rubbing up enough of the hydrastis powder with the potassium solution to make a compound of the consistency of thick honey is applied over the entire region, up to the petrolatum margin, about an eighth of an inch in thickness, and covered with a thin layer of absorbent cotton. This is allowed to remain from five to ten minutes, according to the toughness of the integument. For the face ten minutes is usually required.

Any bleeding, which will occur from denuded areas, should be immediately soaked up with cotton, and not allowed to run down over the healthy tissue, as it will contain potassium and will burn.

d. At the expiration of the treatment time, the surface treated is washed with warm water until the potassium paste is removed.

e. Apply a similar paste made with the zinc and hydrastis over the diseased area, and allow to remain for twenty minutes.

f. Wash this application off, and apply a dry dressing.

The zinc will penetrate the softened tissue resulting from the potassium application, and will make a hard dry eschar that in a few days will separate from the healthy tissue beneath, leaving a clean healthy area that will quickly heal over. This area should be dressed with sterile vasoline until healed.

The resulting scar is smooth and not disfiguring, and where the directions are carefully followed there will be no recurrence. In cases where the ulceration is extensive, and the surface denuded of skin, the potassium paste had better be omitted, and the zinc alone used, as the former will produce severe bleeding. The integument covered edges, however, should have the full treatment.

172 Commonwealth Ave.

**Additional Notes by Dr. Park**

In answer to a letter, the author writes, "Perhaps it would be better not to specify the local anesthetic. Every doctor has his pet one."

"Both of these ingredients are very destructive, but if my directions are followed, there is no danger of undue extension of the area to be destroyed. I once destroyed an epithelioma of the eyelid, in an elderly woman, which involved the entire eyelid and had been previously under treatment for many months at the Boston City Hospital, with one treatment by this method. The treatment lasted two minutes, and the result was a perfect cure without deformity. . . .One would think that the actual cautery would accomplish the same result, but it does not do so. Many of my cases have been treated in hospitals with the cautery, but the lesion always came back. I have never seen a recurrence in my cases."

—

(The first patient referred to in Dr. Park's article was written to and a reply received. It is now 11 years since the above mentioned treatment was given; there has been no recurrence and the patient is in good health, but it must be remembered that these severe escharotics must be handled with care. Ed.)

## Escharotic Treatment of Tumors

The use of zinc chloride to destroy tumors has been carried on at a number of unapproved institutions. After zinc chloride is applied locally, a large area of slough appears, but the lesion eventually heals over. The wide area of destruction with secondary fibrosis caused by the paste often results in marked disfigurement. *An eye, nose or an ear may be completely destroyed by paste* applied to a relatively small and even remote lesion. After apparent healing, there may be cure, but if the lesion has any depth, recurrence is the rule. This quiescent period may vary from a few weeks to several years before the deep-lying tumor in the matrix of the scar tissue again begins to grow and ulcerate.—Lauren V. Ackerman, M.D., *J.M.M.A.*, June, 1943.

**PUBLIC MONOPOLY**

There is far more danger in public monopoly than there is in private monopoly for when the government goes into business, it can always shift its losses to the taxpayers. The government never *really* goes into business for it never makes ends meet and that is the *first* requisite of business. It just mixes a little business with a lot of politics and no one ever gets a chance to find out what is actually going on.

—Thomas A. Edison

# The "Seasonal Cold Syndrome" of 1943-1944

## Report of 75 Unselected Consecutive Cases From General Practice

*By* S. M. SIMON, M.D, *Willard, Ohio*

AN EPIDEMIC of respiratory infection which swept the country reached its peak in December, 1943, and gradually declined in January, 1944. This epidemic was called influenza or just "flu" by some. I prefer to call it the "seasonal cold syndrome" of 1943-44.

My practice is in a town of about 5,000 population. About 75 per cent of the working people are employed by the railroad. Of the remaining employed persons, a large number work at an airplane plant. Both of these occupations are essential to the war effort, and it was of the greatest importance that absences from work be held to a minimum.

Altogether I treated about 135 cases of this cold syndrome during a four-months period. After the epidemic was well on its way I began to make detailed notes and am able to report on 75 consecutive cases which were seen, after the compilation of detailed records was begun. These notes cover symptoms, diagnosis, treatment, results and etiology; and they are offered not as the work of a specialist but as the methods adopted by a general practitioner.

### Symptoms

The symptoms of this syndrome included headache, fullness in the head, fatigue, malaise, muscular pain, cough, sore throat, pleural and chest pain, diarrhea, fever, polyuria and tenesmus. The predominating symptoms were fever, high pulse rate, and diarrhea. Eight children, whom I at first placed in this group because they exhibited the three predominating symptoms, later developed measles and it is to be assumed that these were the prodromal symptoms of measles. Three adults in the series developed pneumonia which resolved readily under sulfadiazine therapy.

### Physical Findings

A frequent finding in these cases was inflammation of the tonsils with tonsillar patches simulating streptococcus sore throat. In every case that complained of headache and fullness of the head I found acute sinusitis with acute congestion of the nasal mucosa. Acute sinusitis was tested for by transillumination which showed definite cloudiness of the maxillaries in 21 patients. Postnasal drip and injected pharynx were present in 51 cases; acute sore throat with inflammation in 26. Pleural pain and dyspnea were seen in 14 cases. In every case with a temperature of 103° F. and without signs of consolidation in the lungs it was possible to hear scattered rales in the chest and bronchial breath sounds. Tachycardia was the rule. In some cases palpation showed general tenderness over the entire abdomen. Diarrhea was present in 18 cases.

Urinalysis was routine and this brought to light three cases of diabetes mellitus which were treated accordingly. Evidence of important kidney damage was not found in any of the cases. The hemoglobin content of the blood was below normal in about one-third of the cases. No instance of mental impairment or nervous disorder was observed.

Children under ten years of age presented higher temperatures than those over ten. Oral temperatures of 104° 105° F. (or corresponding rectal temperatures) were not uncommon especially in children under the age of four. Oral temperatures of adults were never higher than 102° F., except in the three cases in which pneumonia developed. Diarrhea was common in children between the ages of six months and two years. It occurred in 10 out of 18 children. Adult female patients were, as a rule, not as ill as adult male patients.

### Treatment

Bed rest and a daily cleansing sponge bath with tepid water was ordered routinely. Fluids and fruit juices were forced in most cases, the purpose of the fruit juices being to supply both water and calories. Adequate calories were of importance because of the increased metabolism accompanying the fever. Forced fluids were ordered because of the increased need of elimination. A soap enema was usually ordered, the purpose being not only to clean out the lower bowel but to relieve gas formation. The enema was also administered to the cases with diarrhea. A pectin preparation was given with good results in the treatment of diarrhea, the diet being chiefly bananas, jello and custards.

Acetylsalicylic acid was prescribed in the majority of cases. For children aged 1½ to 5 years, 2½ grains were given every four hours until four doses were

taken. In children 5 to 10 years, the usual dose was 5 grains. Adults received somewhat larger doses and were also given sulfadiazine. During the first twenty-four hours a total of 1¼ grains of sulfadiazine per pound of body weight was given. This was reduced to 1 grain per pound per day on the second day, and to ¾ grain per pound on the fifth day. The daily quantity was divided into six doses, and the patient also received six doses of 10 grains each of sodium bicarbonate daily. Sulfadiazine was believed to have definite value in these cases. All patients alkalinized promptly and no side effects from the sulfadiazine were observed.

Stabilized aqueous solution of sulfathiazole sodium with desoxyephedrine hydrochloride was prescribed as nose drops for every case, the patients being instructed in the proper method of instillation into the nasal cavities so as to reach the sites of the sinus openings. This treatment was given only during the first three days. It was believed that this shortened the illness by an average of two days.

Large amounts of vitamin C (ascorbic acid) were given to each patient. Cough was controlled with large doses of codeine incorporated with ammonium chloride in a palatable cherry-flavored syrup. In every case the patient was advised to apply camphorated oil to the chest and to use a woolen jacket. This was useful partly for palliation and partly for its psychological effect in conforming to old traditions.

When ambulatory patients were seen in the office and the beginning of the cold syndrome was suspected, sulfanilamide powder was applied locally by means of a pressure pump. The entire nasal passage and the pharynx were sprayed, reaching as deep into the larynx as possible. This was used as a prophylaxis, it being hoped that bacterial complications and lost time from work would thus be avoided. Twenty-four patients were treated in this manner. Prophylaxis also consisted of three injections of a polyvalent catarrhal respiratory vaccine at intervals of two days.

## Results

In this series there were no deaths nor an excessive number of complications. The syndrome was aborted in the patients who received the prophylactic treatment consisting of topical application of sulfanilamide to the nasal mucosa and injection of catarrhal polyvalent vaccine.

## Etiology

I have checked carefully the possibility of vectors of the virus in families where a patient was afflicted with the syndrome, but was unable to find them. There were, for example, instances of children living and sleeping with the patient and yet remaining entirely free of the disease. This leads me to suggest that the viral or bacterial cause is localized in the nose or the accessory sinuses of the patient and becomes virulent as a result of changes in the barometric pressure and temperature. The inability of the body to cope with chilling and with changes in the barometric pressure and the failure of the patient to dress so as to prevent chilling are contributing factors. The presence of a source of infection in sinuses, tonsils, teeth, and so forth, is a primary cause. This virus or bacterium is not necessarily virulent to other persons who may be in contact with the patient. When the virulence of the virus or bacterium becomes greater than the resistance of the host, the infective agent is then able to invade the upper respiratory organs and eventually the general system.

## Summary

This paper is a report of 75 unselected consecutive cases of an epidemic of a respiratory infection in my community which reached its peak in December, 1943, and declined during January, 1944. I prefer to call it the "seasonal cold syndrome of 1943-1944."

The treatment is described in detail. With this treatment two forms of sulfonamides were used, namely, sulfadiazine orally and a stabilized solution of sodium sulfathiazole-desoxyephedrine hydrochloride by nasal spray.

The fact that the patients who used this treatment recovered without any complications or sequelae suggests that it is effective.

Studies of these patients suggest that sudden chilling of the body along with changes in barometric pressure and the inability of the body to cope with these changes is an important contributing factor in the development of this seasonal cold syndrome.

The prophylactic treatment, which consisted of blowing sulfanilamide powder into the nose and giving three doses of polyvalent catarrhal vaccine, appeared to be effective. Patients receiving this treatment in the early stages did not develop fulminating colds. In fact, the symptoms disappeared within a day or two and the patient lost no time from work.

120 Myrtle Avenue.

# Syphilis: Primary and Secondary Lesions

*Furnished by* HERMAN GOODMAN, M.D.*
*City of New York Health Department.*

Fig. 1. Primary Syphilis.

Fig. 2. Chancre (primary syphilis).

Fig. 3. Syphilis (tertiary).

*Assistant Director, Bureau of Social Hygiene; In Charge, Education and Epidemiology.

Fig. 4. Chancre (primary syphilis).

Fig. 5. Secondary Syphilis.

Fig. 6.
Secondary Syphilis.

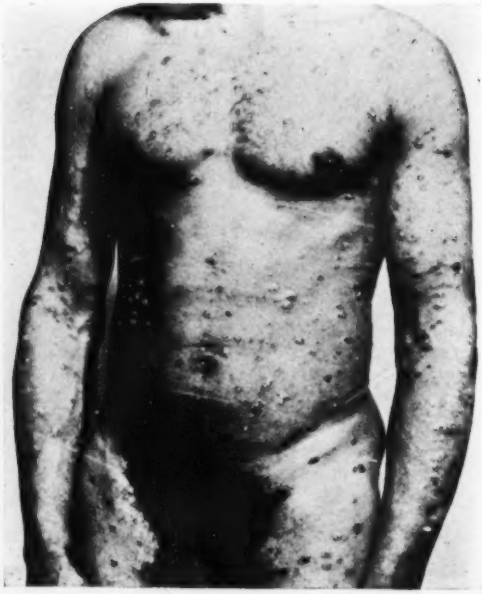

Fig. 7.
Secondary Syphilis.

# GRADUATE COURSE

## Fatigue

The term "fatigue" means all things to all men. Its significance ranges all the way from metaphysical concepts to the realm of stark reality. No state of the human body is mentioned more often than that of fatigue and none covers a greater range of stimuli through which it may be produced. None of us are free for long from some of its manifestations.

We may begin by a brief review of familiar types of fatigue. The sprinter is exhausted at the end of a 100-yard dash, due primarily to oxygen debt. In contrast, at the end of a marathon race, the runner has used up most of his available energy reserve. The steelmill worker, performing hard work in external temperatures of 120 degrees or higher, may break down primarily through loss of body fluids and salt. The mountaineer at high altitudes becomes fatigued because of low oxygen pressure in the atmosphere. The aviator in war time, in addition to low oxygen pressure, suffers from a complicated array of other fatiguing stimuli now urgently calling for solution. In this connection anoxia at high altitudes is important, but if our investigations concerned with fatigue in pilots deal only with this question we may well lose the war. Perhaps even less understood is the *fatigue of the housewife*, due to care of the household, bearing and supervision of children, preparation of food and a host of other obligations. The laborer, the business man, professional man, student, teacher, soldier, sailor—all feel to some degree the ravages of fatigue. The idle suffer from fatigue if idleness becomes sufficiently prolonged. The only characteristic common to all forms of fatigue is the discrepancy between the processes of wear and repair.

From a clinical point of view awareness of the nebulous nature of our understanding of fatigue is part of the daily experience of those who attempt to deal with it. While fatigue is usually the first symptom mentioned by the patient to his doctor, we are handicapped in any discussion of the subject because we do not know from a scientific point of view what fatigue is.

Furthermore, resistance to fatigue or precipitation of it under what appear to be identical conditions varies from individual to individual and may change with age and other factors not readily recognized. Fatigue is a common product of various organic diseases, of undernutrition, of lack of physical conditioning, but in its most general forms *appears to be a physiological disturbance not necessarily accompanied by organic changes.* If long continued, it may lead to organic disease and forms, as we now believe, the background upon which many acute and some chronic ailments of the race are planted.

### Fatigue in Every Day Practice

I have not only the difficulty of attempting to discuss a subject for which we possess no adequate definition, but there is also the serious barrier set up by many physicians who fail to consider fatigue as a close ally of many conditions they are called upon to treat. In the busy rush of daily practice, the tendency too often is to think in terms of the specific derangement instead of the derangement plus the person who is suffering. An over-all look at the patient as a person—including his way of living, his family, his problems, his anxieties, the pressures under which his life is spent—provides the main source of our clinical knowledge of what fatigue is and the effects it may produce in human beings.

As physicians we are greatly indebted to psychiatry, sufficiently to enable us in practice to eliminate the need of psychiatrists for incipient stages of trouble for all but a very small number of our patients, if we take a realistic view of things and act upon our knowledge. If we are prepared to take advantage of some of the principles of psychology and psychiatry and of our knowledge of people in general, we can attack at their very initiation many states that through neglect or indifference lead to sorrow if not to chronic invalidism. Because of

failure of a sensible program, in which all of us, doctors and public alike, are involved, we ask magic from our colleagues in psychiatry. I propose to discuss results of everyday events happening to people in the ordinary walks of life.

### What Is Fatigue?

For our people we may define *fatigue as the product of the summation of stimuli for which the total organism does not make adequate daily compensation.* In this sense the terms "fatigue" and "anxiety" may be used synonymously. Breakdown results, called fatigue by all of us, which may have no other expression than inability of the person to carry on the day's work, or may provide the soil for that vast variety of intangible symptoms brought to the attention of doctors every day, or may crystallize in such states as hyperthyroidism, many cases of hypertension, ocular neurosis, duodenal ulcer, ulcerative colitis, chronic indigestion, dermatitis, so-called sinusitis, backache, often repeated respiratory infections, rheumatoid arthritis, simulation of bowel obstruction, frequent and varied types of cardiac disorder, and so on.

At the present time, there are no adequate physiological tests by which this type of fatigue may be measured. Our ignorance in these matters is partially offset by clinical experience which shows that much may be accomplished in relief if we recognize constantly that *we are dealing with a person, not a stomachache.* The prescription reflex so highly developed by doctors should be controlled by a very long latent period. In its stead should come understanding of the pressures under which the patient lives his life. What are his fears, anxieties, insecurities? Remorse, lack of independence, failure to achieve or have achievements recognized, unhappy family life, the whole train of events leading to worry and unhappiness — understanding of these is the prime concern of the doctor, the educator, the economist, the industrialist and the government expert.

In a physiological sense, fatigue is a natural product of use of the body. Recovery from it restores a sense of well-being made more estimable by contrast with the tired state. Pathological fatigue is another matter. It comes from strain, from lack of experience, from striving for ends beyond reach, from demands upon organisms unfit or unprepared to meet them.

A better perspective of our present problem may be gained if we may make a brief survey involving rather large numbers of people. Why, among undergraduates at Harvard College, should the highest rate of incidence of illness fall among the young men of the freshman class? And among graduate students, why does the rate of illness in medical students exceed that occurring in any other graduate school of the University?

For the majority of freshmen, the problems of adjustment incident to starting a college career lead to states of worry and frustration accompanied by fatigue, frequently associated with the development of respiratory infections or other manifestations of illness. Often repeated respiratory infections or the complaint of chronic sinusitis are accepted by us as prima-facie evidence of maladjustment, or if you like the term better, of unhappiness. The struggle to survive in a large community, to get on with one's fellows, to organize and make effective use of time, to achieve independence, to obtain necessary funds, to retain a scholarship — these are the types of experiences through which only comparatively few come without falling heir to trouble of one kind or another.

In the Harvard Medical School last year 42 per cent of 527 men were admitted to the Infirmary or to the teaching hospitals of the Medical School. The annual cost of medical care of medical students is greater than for students of any division of the University. This is in part due to the cost of various techniques applied in the routine examinations of medical students not commonly made with other students, but is in large part due to the volume of illness. The usual explanation given is that medical students work hard and that they are more exposed to illness. These are probable factors as in the case of tuberculosis, but I wonder about the role played by apprehension and introspection in a field in which, to cite one example, many students are apt in their thinking to have the disease last encountered in a patient. What appears to be needed is a more objective type of approach both to work and living in which the individual may separate himself more successfully from the problems he is called upon to consider.

In this connection, the following data are not without interest. From 1935 to 1941, 372 appendectomies were performed in Harvard students — a rate of 7.85 per thousand, the age groups ranging approximately from 17 to 26 years. Among freshmen the rate per thousand was 12.6, for serniors 8.5, for law men

8.5, for men in the Business School 3.9, and for the medical students 9.6. All students in the University have approximately equal opportunities for consulting a physician and our records show they do so with extraordinary frequency. Is this experience with appendicitis the result of mere chance, or does it have some bearing on the question of fatigue? It may be shocking to some of you to think of appendicitis in this connection but under some circumstances, at least, you may find the concept not beyond consideration.

In another area and on a much larger scale, reports from England indicate that *most of the common run of complaints for which people in peacetime sought advice from physicians have largely disappeared,* as was the case, also, in World War I. There is now for the people of England a great objective to be gained with less time for the personal worries, introspections, and preoccupations which so often lead to grief, despair, and illness. Hundreds of thousands, if not millions, of people have suddenly, through the exigencies of war, found their place in the sun. Participation in the common cause has provided for the time being new interests, new satisfactions, new communal endeavors. Recession of illness under these circumstances suggests a good sense of well being for the people without which a high standard of health is not possible. A crude but poignant reminder of this same effect on a national scale is the barometric rise of the suicide rate with bad times and fall of this rate with return of better days.

We have no figures from 1910 to contrast with 1940, but it is the impression of doctors everywhere that the number of nervous, tired-out people has increased greatly within this period. Fatigue has become an omnipotent factor, not to be left out of consideration in nearly every patient who consults us.

### Organic Disease Plus Fatigue

The well known influences of the role of fatigue in common states such as hyperthyroidism, duodenal ulcer, various types of neuroses, and so on have frequently been discussed. We must, however, broaden our vision with reference to one condition after another. For example, congestive failure in a patient with rheumatic heart disease may occur not primarily due to structural changes of heart valves or to the activation of rheumatic fever, but to a wearing down process of the whole organism through worry. Prognosis may be greatly altered if effective changes, beyond those involved in the usual medical routine, can be instituted. Some cases of bronchial asthma cannot be cured without readjustment of sources of anxiety. When latent migraine or latent epilepsy becomes overt the events of the preceding months or years must be understood by the physician if these difficulties are to be controlled properly. *Not a few cases of angina pectoris are better treated by removing causes of fear* than to depend upon the use of nitroglycerine and a restricted life. Extraordinary cases of dermatitis are going from one dermatologist to another for want of understanding of the role played by problems of living, as Stokes has pointed out. Many symptoms assigned to conditions in the nose, sinuses, and throat are made worse rather than better by operative procedures. The symptoms here may be referred to the head as the symptoms of an ocular neurosis are referred to the eyes, but the source of the trouble lies elsewhere. Examples of like kind and doubtless many others will have passed through your minds as you read.

In their paper dealing with 1,500 cases of recurrent peptic ulcer, Brown and Dolkart concluded that "functional nervousness including fatigue and anxiety, was by far the greatest detectable cause of recurrence," and in many cases that the same causes might be responsible for the original ulcer. They say, "treat first the patient, second the bowel, and last the ulcer."

It is perhaps futile to recount in detail the story of the development of any of these conditions but I should like to dwell for a moment on one type of particular interest to me in which fatigue engendered by pressure of living and fear accounts in large part for the symptomatology, and as I think, for the premature development of organic changes. There is a group of high-strung, high pressure men in the forty's and early fifty's who suffer from repeated daily attacks of angina pectoris. The attacks almost invariably occur under given conditions, such as while shaving, while stooping over to tie shoe strings, on opening a given door, on receipt of perplexing news, on walking a certain distance to a given street corner. These patients show little abnormality on physical examination, by X-ray examination, or by electrocardiographic changes. They have usually been frightened by instructions from physicians to restrict all activities and to use vasodilator drugs. They go on for many, many years suffering from fear of im-

pending death. It appears likely that, in the beginning of the history of attacks, there may be minimal coronary sclerosis present. An attack of pain having occurred in this type of hypersensitive intelligent person, the repetition of attacks seems to be due to a conditioned reflex, the trigger of which is fear of repetition of pain. Release from this syndrome can be obtained usually only through resolution of fear, restoration of confidence, rest through a holiday, and finally resumption of activity, including golf or other abandoned simple forms of recreation.

Heberden, in his original paper, 1768, mentions that angina pectoris is increased by disturbances of the mind.

In view of our ignorance of many matters, it is certain that we as physicians must learn more about the personality structures of our patients if we are to deal adequately with the vast majority of complaints they bring to us. There are reasons, at present unknown, why fatigue appears to precipitate one type of disorder here and another there. The combinations of physical and mental characteristics studied by Draper and others have meaning that cannot be discharged completely by the scepticism of those who will not look and listen. We know now, to take one example, that most patients suffering from rheumatoid arthritis differ in physical characteristics from patients having degenerative joint disease. We know, too, that arthritis of any kind is rare indeed among psychotic patients confined to our institutions. In work now going on in Cambridge, it is apparent that assymmetries of the body go hand in hand with instability of the whole organism, with histories of unfitness and of excessive illness, suggesting that the germ plasm plays a role which some day may be recognized through the veil that now shrouds our knowledge. It is to be hoped that the time will come when we may classify people into groups with reference both to mental and physical characteristics as we now have classifications for disease groups. Then many relationships between illness and the type of person who has the illness may emerge from their present obscurity to help us deal more intelligently both with the person and his illness. Suddenly, owing to the needs of the armed services, the demand is wide-spread for the means to determine the quality of a man in a five-minute interview. The very core of modern preventive medicine lies in the area of greater understanding of human beings as they go about their daily pursuits. Knowledg gained by the skillful practice of medi cine from this point of view should b combined with systematic studies o man which should become establishe in many of the university centers in th country. Strangely enough we seem t know more about man when he is i than when he is well. It is fair to sup pose that if this paradox were reverse the welfare of the race might be greatl improved.

The psychogenic aspects of fatigu and their relations to illness still awai scientific proof. Apparent cause and ef fect have long constituted the core o wishful thinking. Nevertheless, thos who are experts at worry become th most fatigued. Next in line are thos who are dissatisfied and unhappy, an last a large group swamped by the dul and dreary grind of daily tasks. We ar quick to recognize shell shock in the soldier and sailor. We seem loath t recognize the same or analogous pic tures in our patients when they follo from less dramatic, more insidious fac tors, slowly but surely at work over th months and years. Some of these in fluences we can stop, some we ca modify, and for some we can teach acceptance. As a people, we are vic tims of time and circumstance. We have too many bad conditioned reflexes; we know too many things that are not so We are conditioned by fear fostered by commercial advertisers. We have crutches instead of feelings of independence. We have an increasing divorce rate Emotions rather than reason control our acts. Whenever sound established routines, whether of church or state, are disrupted, as is now the case on a grand scale in Germany, and in their stead are placed chimerical objectives such as *Lebensraum*, disorganization of society follows. We hear much of subconscious motivations but if as physicians we could learn to deal with the conscious field we should greatly relieve the majority of our patients. If we look for causes of unhappiness, using this term in a broad sense, and do what we can to remove them, we shall have done much to relieve fatigue.

In conclusion let me say that if I have appeared to involve most of the range of medical practice in the term *fatigue*, I should like to suggest that we have no alternative but to ascribe to pure coincidence the part it plays in the complex phenomena with which we deal.—A. V. Bock, M.D., (Harvard Medical School) in *Trans, Coll. Phys. Phila.*, June, 1942.

# *Editorial*

## Don't Diagnose Neurosis Until . . . !

Mrs. J. M. was a spoiled young housewife whose father had more money than was good for her. At inconvenient hours, she would have gallbladder "attacks" which were not typical and not severe. On examination, a very slight tenderness would be found in the right upper quadrant. Muscle rigidity, fever, fast pulse, vomiting, crampy abdominal pain—all were absent.

These attacks often occurred after some incident which was emotionally upsetting. The last abdominal pain followed shortly after an auto accident in which she was involved because of careless driving. To add to her humiliation, the judge reprimanded her.

To any student of psychosomatic medicine, it is evident at once that the pains were a means of escape from an intolerable situation. The patient did not report for x-ray studies during the time she was free from pain, so that a scientific checkup was impossible.

She was finally referred to a famous consulting physician who reported that little was found on examination but that one test indicated inflammation, and mainly on the basis of this one test, he recommended surgery. The patient was explored and a chronic empyema of the gallbladder found.

That test is one that can be performed by any physician, in home or office, as readily as he can remove blood by puncturing a vein. "When its limitations are known, *it can give more valuable information than any other single test*, except possibly the blood count. The test is simple and is performed by placing a measured volume of blood which has been taken from the vein of a patient and to which an anticoagulant has been added, into a calibrated tube. The tube is allowed to stand for one hour and the reading is made at that time. In fluid blood, the red cells gradually settle out from the plasma. The speed of the sedimenting action is increased in the presence of active infection of most types, when there is destruction of tissue from any cause, in pregnancy, in many blood dyscrasias and in cases where there is an actively growing tumor."

"Normally, the cells will settle only 3 to 10 mm. in one hour; a reading above 15 mm. is indicative of the presence of an abnormal situation in the body. Thus by the performance of one simple test, an idea can be obtained concerning the presence or absence of a great many serious and often difficult to diagnose conditions. If the rate is normal, many diseases can be ruled out. In the presence of infection, the rapidity of the sedimentation rate roughly parallels the severity of the infectious process."

"A patient may have many vague complaints suggesting a neurosis. The finding of a rapid rate in such a patient would prompt one to make an exhaustive search for the cause."

"This test can be used to measure the activity of rheumatic fever, rheumatoid arthritis and pulmonary tuberculosis (as well as pelvic inflammations). In some of these cases, there may be practically no other sign of activity except a rapid "sed" rate. Most authorities are agreed that cases of this type in which the sedimentation rate remains rapid should be under strict supervision and probably should remain in bed. In the study of cases in which there is a suspicion of tuberculosis, rheumatic fever, lymphoma, such as Hodgkin's disease, a normal sedimentation rate is very reassuring."*

The Westergren method is very simple. It is performed by drawing up 0.4 cc.

*These quotations are taken from McComb's "Internal Medicine in General Practice" published by W. B. Saunders Co of Philadelphia; the best condensation of medical diagnosis and treatment in print today.

sterile sodium citrate solution into an ordinary 2 cc. syringe. The same syringe is used again and blood from the patient's vein is drawn in to the 2 cc. mark.

Tilt the syringe back and forth to insure a good mixture of blood and citrate. Squirt out the contents of the syringe on a watch glass. Suck up the blood-citrate mixture in a Westergren pipette to the mark 0, and place it vertically in the Westergren rack.

The number of mm. that the red cells drop in the pipette in 1 hour is the sedimentation rate.[1]

The equipment costs no more than a few golf balls. Why not have it handy and use it on all patients who have vague symptoms and as a means of controlling the care of those patients convalescing from serious illness?

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*We are cured of our own vices by seeing how unpleasant they are in other people.*—MANLY P. HALL.

◆

## Making the Patient Think

We, as physicians, know that certain signs or symptoms must be investigated by certain studies. But, does the patient realize the importance of such signs as coughing up of blood, bleeding from the vagina, lump in the breast or abdomen, a skin sore that does not heal, urethral discharge and so on?

Does the patient realize that an x-ray of the chest is absolutely necessary if he has a chronic cough, coughs up a little blood or is losing weight for no apparent reason?

Does the patient of 40 or 50 who has indigestion for the first time realize that an x-ray study is usually necessary?

The physician often does not have time to explain all the details to the patient, the latter often wants to put it off to see if he will get better and as a result, good medical care is not given.

If the physician gave the patient a brief printed statement telling him of the facts, he would be carrying out his obligation better and the patient would have something at hand to read and think over.

If enough physicians desire such statements, *CLINICAL MEDICINE* will find such as are already available and make up others as needed.

[1] Technic is summarized from Gradwohl's monumental two-volume "Clinical Laboratory Methods and Diagnosis" published by C. V. Mosby Co. of St. Louis.

## Suggestions for Mental Composure and Efficiency

1. To secure peace of mind
   a. Accept your present lot without fretting.
   b. Assume that right and justice will ultimately prevail.
   c. Strive for improvement without hindering the progress of others.
   d. Avoid controversy by having a clear understanding in dealing with others.
   e. Regard the achievements of yesterday as foundations on which to build today the temples of tomorrow.
2. To solve difficulties
   a. Act promptly in meeting issues.
   b. Accept full measure of responsibility.
   c. Acknowledge faults and make reparation as soon as possible.
   d. If others are at fault, be lenient in making demands upon them.
   e. Do not dodge issues or run away.
   f. Do not seek aid from alcohol or drugs. They only aggravate difficulties.
3. To reach decisions in important matters.
   a. Learn relevant facts.
   b. Learn customary practices.
   c. Anticipate results from experience of others.
   d. Compare probable costs with probable gains.
   e. When all data are available, concentrate on problem and decide promptly.—*Mental Hygiene News.*

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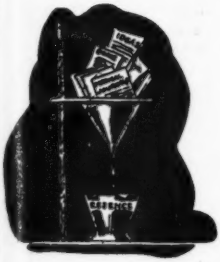
## Office Study for the Practitioner

*The practice of medicine is the care of a patient*, whether you have one or thirty patients a day. The easiest, most illuminating form of teaching is that which can be done every day in your office. Instead of running through a bunch of patients so as to have time to study the articles in your medical journal or to play golf, go slow. Write notes down about each patient. Criticize all diagnoses, especially the obvious ones.

Look over your records at the end of the day. Do you find that you have "pet" diagnoses which are made almost every day? Do you tend to jump at diagnoses and look for confirmatory evidence instead of keeping an open mind until all clinical and laboratory findings are on record? Do you ever look up your cases to see if you have forgotten a possible diagnosis or to learn of a more effective treatment?



# CLINICAL NOTES and ABSTRACTS

Microfilm copies of any of the published papers here abstracted, up to 25 pages, may be obtained for 25 cents from Microfilm Service, Army Medical Library, Washington, D.C.

## Rehabilitation After Fractures and Injuries

Rehabilitation: the planned attempt through the use of all recognized measures, under skilled direction, to restore those persons who because of disabilities do not assume to the greatest possible extent and at the earliest possible time that place in the productive stream of society which they are capable of assuming.

This definition was approved by the Council of Rehabilitation which met in New York in 1942. This Council meeting was attended by representatives from all the societies concerned.

The story of the rehabilitation of the injured workman or the injured person in our armed forces is told by one case related by Watson-Jones:

An air gunner was admitted to a civilian orthopaedic hospital in November, 1940 for the treatment of a torn and displaced semilunar cartilage. In August, 1941 no less than ten months after admission, he was still in the hospital and totally incapacitated. Why was recovery so long delayed? The diagnosis had been correctly made and a skillful operation performed. The wound healed by first intention; there was no infection, arthritis, or surgical complication. Daily massage had been continued, but the muscles were still wasted and weak. Two manipulations had been performed under anaesthesia, but movement was only half of normal. The gait was slow and hesitant, he limped; he could not run—he had never tried to run. The medical officer blamed him because "he would not cooperate," because he was disinterested, depressed and resentful. He was certainly depressed, for after ten months the incapacity was more complete than on the day of admission. He was disinterested because, in his words, "nobody takes any notice, and it looks as if it is hopeless." He was resentful because he could not believe that the fault was his. Had he not been told that "the nerve in his knee was cut?"

He was transferred to one of the orthopaedic rehabilitation centers of the R.A.F. Medical Service. He saw the sky, the sea, the open spaces. For many months he had seen only the stone walls of hospital wards, the stone walls of massage rooms, the stone walls of many corridors. In his new surroundings, there was a lounge and writing-room, there were tasteful decorations and flowers, a varied menu, and an atmosphere of well-being and contentment. After a few days, he smiled. He sensed a spirit of optimism and was reassured. His difficulties were explained and he was taught simple exercises. He learned to walk and then to run. He became an enthusiast and worked in the gymnasium, played on the fields, swam in the pool, cycled on the track. In the evening, he attended lectures and concerts or played billiards and table tennis. Time raced past because he was busy. He became bronzed and fit. He laughed and was full of the joy of life. In seven weeks, he returned to his unit and to full duty. The "nerve in his knee" was forgotten.

Ten months' total incapacity—seven weeks for full recovery; that is the story of one air gunner. But is this an isolated case from which no conclusion should be drawn? The answer lies in the records of industry, the files of insurance companies. These records show that the experience of the air gunner is typical of many patients. In this country, at this moment, *there are hundreds of injured men whose surgical treatment was*

Presented at the Symposium on Rehabilitation, Fifth Annual Congress on Industrial Health, Joint Presentation by the Council on Physical Therapy and the Council on Industrial Health, American Medical Association, January 12, 1943.

*concluded months ago but whose incapacity is still total* because minor disuse changes remain or because confidence is lacking and morale has been destroyed. Their bodies have been treated but not their minds. Treatment has been concentrated on the repair of bone and not on the tone and volume of muscles, stability of joints, circulation of limbs, control of edema, and relief of adhesions. There had been no measurement and graduation of physical activity, no continuation of treatment until the patient recognized for himself that recovery was complete. It has been assumed that union of a fracture was followed promptly by the return of full function and that when a man left the hospital he soon returned to work. But now that members of the service may not be discharged as out-patients and lost sight of, it is found that a simple cartilage operation may cause more than ten months incapacity. We have known that a Colles' fracture is united in six weeks but not that this injury may keep a man from work for six months. We knew that fractures of the ankle were healed in twelve weeks but not that they often incapacitated workmen for twelve months. We never conceived that in one series of 276 men there could be a wastage of no less than 168 working years and that stiffness, swelling, weakness and wasting may appear insuperable difficulties to many patients who, being inexperienced, fear that the weakness may be permanent, are terrified of normal strains and hazards, are overwhelmed by the prospect of work and express their fears in the symptoms of "neurasthenia" and "malingering."

Rehabilitation should start at the bedside of the injured patient and should include physical and occupational therapy and later vocational rehabilitation. For instance, in a large civilian hospital the injured patient who has received surgical treatment is given physical and occupational therapy at the bedside and as soon as possible he is sent to the department of physical therapy and to the curative workshop of the occupational therapy department.

Rehabilitation of the injured person must begin while he is still in bed. Dr. Robert H. Kennedy of New York says:

A fracture patient enters the hospital a broken man, *not a sick man* physically or mentally. The less he is put in the category of the sick patient and the more he is treated as a person who was well an instant before the accident and expects to remain well, the shorter will be the periods in which he needs convalescent care. The fracture patient needs work therapy—not a vacation but a hardening process. Ways and means should be devised to keep his mind and body occupied from the start. He should not be treated as a star boarder but as a perfectly well man except for one cracked-up part.

Occupational therapy needs to be introduced much more widely in general hospitals. The great difficulty is to keep it from developing into a routine rather than using the imagination to make the best adaption for the individual patient. Physicians in general cannot know how to do this but they should recognize its value, know when it is well done and back it enthusiastically. Occupational therapy is many times more valuable than the usual types of physical therapy for these patients.

The social service department has a large opportunity in convalescent care while the patient is still in an acute surgical bed. Probably the patient had no neurosis at the time of injury, at least not one sufficient to keep him from working. The social service status needs to be gone into and put in writing in the first few days after the injury. Many persons seem to do excellently while hospitalized, but their whole mental attitude apparently changes shortly after discharge.

### How To Do It

The "Manual of Physical Therapy" was published in War Medicine and since has been published by the American Medical Association as a small pamphlet, price 25 cents. It was edited by the Council on Physical Therapy of the American Medical Association and the National Research Council.

The "Manual of Occupational Therapy," which is soon to be published in War Medicine, will likewise be published as a small pamphlet by the American Medical Association. There is discussed in these manuals the use of physical and occupational therapy in sprains, strains, muscle injuries, dislocations, fractures, peripheral nerve injuries, head injuries, arthritis, infantile paralysis, heart conditions, tuberculosis, spastic paralysis and nervous and mental conditions.

The Council on Physical Therapy aided by a committee of consultants, who were prominent surgeons, and the American Association of Limb Manufacturers recently published "A Manual of Amputations."

The Council on Physical Therapy of the American Medical Association likewise published a "Handbook of Physical

Therapy." This book is now being revised for its fourth edition. It emphasizes the place of physical therapy in the rehabilitation of the sick and injured. It is used as a textbook in many schools for physical therapy technicians and in many medical schools where medical students are taught physical therapy.

In the equipment of departments for physical and occupational therapy rehabilitation, the Council on Physical Therapy of the American Medical Association has a supply of numerous mimeographed designs of apparatus for electrotherapy and exercises. The author will furnish these designs and a description of the equipment used in such departments in a large general hospital in Chicago. The Council on Physical Therapy also publishes yearly a free pamphlet "Apparatus Accepted," which lists the apparatus which is safe and effective. Apparatus is not the important element in physical and occupational therapy in rehabilitation but personnel is.

No program of rehabilitation either in our armed forces or in civilian life will be effective unless it is in charge of a physician. This physician must be interested solely in the rehabilitation of patients and not in furnishing to the insurance companies or court reports on the patient's condition. In a report of seven years' experience in a rehabilitation clinic with coal miners in Scotland, it was clearly shown that the physician in charge could not render reports to the companies or appear in the courts. The injured patient who was sent to the rehabilitation clinic soon lost confidence in a physician who was doing this, as he thought the physician was always against him. The physician in charge of rehabilitation must consider his patients, as Robinson recently stated in his book "The Patient as a Person." Robinson shows that the human problems which surround the patient form as important component of injury and illness and that it is the physician's duty to understand them. The physician in charge of rehabilitation is in a most favorable position to study the human organism in its entirety, both as a living mechanism and as the essential element of human society. In the hospital ward or room the physician attending the patient has little time available for the serious consideration of the person and the personal problems that are contributary to his illness. The patient treated in the physical and occupational therapy department spends possibly an hour in the physical therapy department and three hours in the occupational therapy department. Thus the physician in charge and his technicians have time to discover and to help control the social influences detrimental to the sick and to the injured.

The physical and occupational therapy technicians (or aides, as the Army designates them) should meet the requirements set up by the American Registry of Physical Therapy Technicians at 30 North Michigan Ave., Chicago, and the National Registry of Occupational Therapy is at 175 Fifth Ave., New York city. No rehabilitation program can be successful without the hands and brains of a good technician or aid. Personnel is the most important element in the use of physical and occupational therapy in rehabilitation. — JOHN S. COULTER, M.D., Northwestern University Medical School, Chicago, Ill.

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## Ascorbic Acid in Cardiac Decompensation

Ascorbic acid in combination with Mercupurin (mercurophylline) produced relatively large diuresis in decompensated cardiac patients; the acid alone was not diuretic when given intravenously and only mildly diuretic when given orally. Average output of urine increased from 250 cc. to 1 L. of urine in 72 hours in 10 patients given 500 mg. ascorbic acid daily by mouth for 6 days. —C. F. SHAFFER, M. D., in *J.A.M.A.*, Mar. 11, 1944.

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## Types of Local Anesthetics

*For Injection, Infiltration and Various Types of Block Anesthesia.* — Procaine hydrochloride, USP, also called novocain, the local anesthetic of choice. Apothesine, NNR, of minor importance. Intracaine, NNR, more potent than procaine, nonirritant on injection; slightly more poisonous than procaine.

*Nonirritant for Topical Application to Mucous Membrances in Watery Solution.* Cocaine hydrochloride, USP, vasoconstricting. Metycaine hydrochioride, NNR, equal to or stronger than cocaine, not vasoconstricting, non-mydriatic — the most nearly ideal local anesthetic for topical application.

*Weaker Than Cocaine, Recommended for Topical Application Preferably on the Eye, Also for Spinal Anesthesia.*—Larocaine, NNR, (burns on eye). Tutocaine, NNR. Amylcaine, NNR.

*Irritant Local Anesthetics, Introduced on Account of Inadequate Testing*

*Methods: (Arranged in Approximate Order of Potency.)*—Diothane, NNR, extremely potent anesthetic, smarts on eye, tissue edema on injection. Butyn or butacaine, USP. Eucaine (A and B), USP, chiefly of historical interest—irritant and very poisonous. Alypin, NNR, smarts on eye, at 1 per cent persistent inflammation in intracutaneous test. Tropacocaine, a minor coca alkaloid, vasodilating, irritant. Stovaine, a French drug, vasodilation, irritant. Phenacaine, USP, also called holocaine, smarts at 1 per cent on eye, irritant. Quinine urea hydrochloride, USP, a protoplasmic poison; anesthetic potency doubtful, may be absent; highly irritant; causing necrosis of nerve fibers on injection, also tissue edema. Benzyl alcohol, NNR, highly irritant, almost devoid of anesthetic action. Saligenin or salicaine, resembles benzyl alcohol.

*Highly Potent Local Anesthetic.* — Pontocaine hydrochloride, NNR tetracaine USP XII, 5 to 10 times more anesthetic than cocaine, highly toxic, used for prolonged spinal anesthesia and topically.

*Nupercaine Hydrochloride, NNR,* strongest of all introduced local anesthetics, having 10 to 50 times the potency of cocaine. It is extremely poisonous, irritant in concentrations over 1:5,000, and vasodilating. Should not be used in concentrations over 1:1,000; 135 cc. of 1:1,000 have proved fatal. Anesthetic action lasts about 12 hours.

*Water Insoluble Local Anesthetics.*—Ethyl aminobenzoate, USP XII, (anesthesin, benzocaine) when dissolved in propylene glycol it is a most efficient topical anesthetic on oral mucosa (M. L. Tainter). Various solutions are marketed under various names; most ointments containing benzocaine are inactivated by the fat present.

Butesin, NNR, Cycloform, Orthoform, NNR, are similar to benzocaine without material advantage.

Water insoluble anesthetics, preferably emulsified, are the only ones which can be used on wounds or burns.

### Conclusions

The above made statement that only a few local anesthetics satisfy the indispensable requirements should be modified to read that just one or two drugs of each type can be recommended, viz., the following: (1) For injection, infiltration and block anesthesia: only *procaine*, 1 per cent. (2) As synthetic cocaine substitute (besides cocaine itself): metycaine, being heat-stable and nonmydriatic. (3) For prolonged spinal anesthesia: pontocaine (tetracaine), perhaps also tutocaine. (4) As a water-insoluble local anesthetic: benzocaine.

The concentrations of the last fo drugs for topical application are:

| | Mouth and Throat | Eye |
|---|---|---|
| Cocaine | 20% or solid substance | 4% or less |
| Metycaine | 5% to 10% | 2% |
| Pontocaine | 2%—use not more than 1 cc. on the larynx | ½%, better use pontocaine ointment |
| Benzocaine | 10% in propylene glycol | Not recommende |

—*Anesth. & Anal.*, July-August, 1943.

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## Treatment of Gastroenteritis

*Question:* What treatment should b used for gastroenteritis? Are sulfona mides indicated?

*Answer by* J. A. BARGEN, M.D., *Chi of Proctology, Mayo Clinic, Rochest*

I am doubtful that one should admini ter sulfasuxidine or sulfaguanidine fo routine so-called gastroenteritis occu ring rather frequently and lasting for day or two or a few days. I have foun the use of **tincture of iodine**, say 10 to 1 drops in a glass of water after meals to be particularly helpful in these case

I hesitate to give the sulfa drugs be cause of the possibility of the patient becoming sensitive to these drugs whe their use might be required later.

I have not had enough experience wit these drugs in undulant fever but I thin that their use might be justified if th organisms were found in the colon. S far, typhoid does not seem amenable t sulfa therapy.

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## Resuscitation of the Drowned

The "Rocking" Method of resuscita tion works as well in the moribund drowned patient as it does in the patien who still has some muscle tone left The Schafer method of artificial res piration is *not* effective when muscle tone has been lost. (See Clin. Med. Aug. 1944, p. 223.)

With each rock, the lungs are ventilated with 600 cc. of air (normal 500 cc). The patient is laid face down on a stretcher (or door or other flat surface). and the ankles and wrists lashed to the handles of the stretcher.

The first head-down tilt of 45 degrees is maintained until no more water drains from the stomach or lungs. After a few tilts of 50 degrees, a tilt of 30 degrees (10 times a minute) will be sufficient to ventilate the lungs. Wet clothes can be removed and warmth applied. Such

a method of treatment not only aids respiration but circulation, especially through the brain.

FRANK EVE, M. D. in *J.A.M.A.*, April 1. 1944.

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## Vitamin B Therapy

In human beings, the administration of riboflavin, (vitamin $B_2$) alone, causes an increased demand for nicotinic acid. Pellagrins treated with nicotinic acid alone have developed clinical signs of riboflavin deficiency or beri-beri (lack of $B_1$). The use of a single portion of the vitamin B complex apparently causes an increased demand for other B factors. *Always give vitamin B complex, preferably in natural form, when using any of the factors*, so that the correction of a single deficiency does not lead to the frank development of some other deficiency, already present in latent form. —L. E. HOLT, JR., M.D. in *Penn. Med. J., Feb.*, 1943.

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## A Simple Arm Sling

An arm sling that can be improvised anywhere is depicted. Instructions: 1. Pull shirt from inside trousers and unbutton it. 2. Bring lower right anterior end, marked A, diagonally up over the right arm to the left shoulder. 3. Bring lower left anterior end of shirt tail, marked B, posteriorly and over the left shoulder. After adjustments are made, tie the two ends with a square knot. Do not remove either arm from shirt sleeve.

For supporting the left arm, reverse the procedure. WARREN MCMORRIS, Chief Pharmacists Mate, U.S.N. in *Hospital Corps Quarterly*, May, 1944.

## The Asthma Problem

(1) *Allergy* is nothing more than an exaggeration of a normal response; (2) Allergic symptoms appear in the nose and lungs but not in the larynx; (3) The patient suffering from intractable asthma of great severity may not have the same disease as the patient with the ordinary, simple asthma; (4) The most important feature of bronchial asthma is the great amount of mucus formed by the hypertrophied bronchial mucus gland and (5) *"The removal of those allergens to which a patient is found to be clinically sensitive, is a surrender to a bad situation rather than a direct attack upon it.*—W. H. RACKEMAN, M.D.

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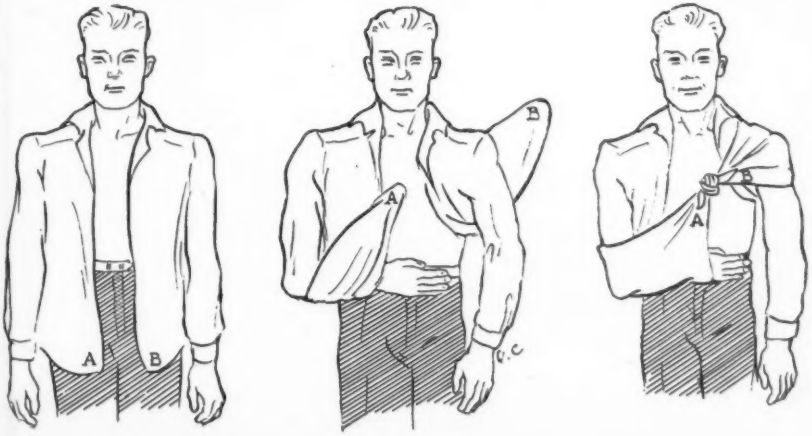
## Ulcerative Gingivitis (Trench Mouth)

The disease is characterized by a rapidly spreading ulceromembranous destruction of the gingival margin usually commencing in some area of stagnation such as the gum flap over the erupting lower third molar or the uncleansable interdental spaces between teeth in malalignment. Extension is by continuity of tissue, and, the result may be a gingivitis or ulceration on the fauces.

The subject of a mild attack or one who receives prompt initial treatment is not greatly incapacitated, but when the attack is severe and occurs in an uncared for mouth, or is left untreated for even a relatively short time, the patient is definitely ill, and shows all the signs of acute toxaemia. A more or less constant feature of the disease is the most unpleasant fetor associated with



it, and its presence is generally sufficient to make a tentative diagnosis. The membranous exudate varies in colour in different cases, being grey or yellowish grey, and follows the irregular outline of the affected part. Most commonly the gums are intensely inflamed and bleed very readily on the slightest injury.

Good results are claimed for antiseptics and caustics such as phenol and the aniline dyes, while iodine, either in weak or strong solution or produced in the nascent state, has its advocates. To combat the activities of the Spirochaete, arsenic preparations were the obvious choice, and they have been used both as local applications, and by intravenous injections.

Equal success has attended physiological therapeutics such as the use of hypertonic saline, and there is much to be said for the value of *controlled lavage* with such simple compounds.

Any deficiency of accessory food factors is met by the exhibition of substances like ascorbic or nicotinic aids, alone or in combination with local treatment and here again results have been encouraging.

To provide rest and protection of the injured part from the repeated injuries associated with the taking of food, thereby giving Nature a chance to assist in the healing process, a principle has been adopted in the form of a supporting and protecting splint for the gingival margin and the necks of the teeth consisting of zinc oxide and oil of cloves. It is carefully applied to the affected areas and greatly contributes to the comfort and well being of the patient. Surgical measures such as gingivectomy may be indicated in certain resistant cases, but is not advised in any acute stage.

**Discussion**

The greater the degree of oral sepsis, the greater is the incidence of the disease.

The greater the degree of oral sepsis, the greater is the severity of the disease.

The greater the oral sepsis, the higher the concentration of Vincent's organisms.

**Treatment**

Application of zinc salt to the local lesions, the injection of arsenicals intravenously and the meticulous and if necessary drastic removal of all stagnation areas is recommended.

Zinc peroxide is faintly soluble. It has been used in association with mapharside powder and with sulphapyridine powder, but without better results. Used as a 10% paste with soft paraffin, it is spatulated with cotton-wool fibres into firm pledgets and these are packed hard into interstitial spaces, beneath mucoperiosteal flaps, into pyorrhoea pockets and other stagnation areas that will retain them. Composition caps are moulded around areas difficult of retention, filled with the paste and pressed home. Such caps, re-warmed, may receive the impression of the opposing teeth and are worn comfortably—even during meals. Cotton-wool rolls, impregnated, are laid in the buccal sulci and beneath the sides of the tongue, and napkins may be spread with the paste and laid against the palate. These can be folded back against ulcerated lips if necessary. Large ulcerated areas heal with remarkable celerity when so treated. The pledgets are changed daily and the rolls thrice daily—an intelligent patient may do the latter himself. After twenty-four hours the pockets are wide open and can be gently irrigated and a little preliminary scaling performed. Deeper scaling is done as the case progresses and finally necessary dental extractions and gingivectomy. All traumatized areas are kept packed and the eventual and generally rapid restoration of interstitial mucoperiosteal bridges and epithelialization awaited. The fact that no caustics are used increases the rapidity of healing.

Arsenic is injected intravenously on the first day and repeated as necessary on the fourth and ninth days. No toxicity has been noticed using mapharsen. —E. R. LONGHURST, *Proc. R. Soc. Med.*, April 19, 1943.

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## Physical Therapy for Vascular Diseases

Peripheral vascular diseases (arteriosclerosis, thromboangitis obliterans, frost bite, gangrene, arterial embolism) are much aided by treatment with intermittent venous occlusion* as devised by Collens and Willensky. Patients with excruciating pain due to ischemic neuritis, ulcer or gangrene, often sleep comfortably after application of the constricting cuff. Indolent ulcers have healed; gangrene of toes has been demarcated. —H. WARSHAWSKY, M. D., in *Arch. Phys. Ther.*, Aug., 1943.

[*The device may be purchased. It permits automatic inflation of a cuff, resembling that used with the ordinary blood pressure machine, and its deflation at regular intervals. The cuff is placed about the upper arm or thigh. If someone, such as a relative or friend, is available to spend time with the patient,

a blood pressure machine and cuff may be used. From one to four hours of treatment are given daily. The pressure is pumped up to 30 mm. and held there for 1½ minutes, then released for 1½ minutes, resumed for 1½ minutes and so on. The pressure is gradually increased until the patient can tolerate 80 mm. as shown on the sphygmomanometer (Dr. Warshawsky's technic). —Ed.]

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## Treatment of Chronic Ulcerative Colitis

Excellent results have been obtained in chronic, apparently intractable, cases of colitis by the establishment and maintenance over several months of a therapeutic pneumoperitoneum. The patient is not confined to bed except for a few days, and his hospitalization can be limited to a short time. Indications for pneumoperitoneum were chronicity, diarrhea, pus, mucus and blood in stools and intractability. Refilling can be done once or twice a week; when pure oxygen is used the intervals are three or four days because absorption is more rapid. When air is used, the intervals are six to eight days. Oxygen, because of its calming effect, is preferable for the first fillings for patients with major abdominal discomfort and frequent colic and for those with a higher grade of secondary anemia and dyspnea. The number of fillings varies greatly; it may be necessary to continue treatment for three months or more. The therapeutic action of pneumoperitoneum is probably partly due to activation of the visceral peritoneum and to "tuning it to a higher pitch" by the setting up of a permanent bland irritation to the peritoneal surface and partly to the mechanical action and the indirect influence on the autonomic nervous system. Pneumoperitoneum is free enough from danger for it to be performed by any practitioner, even without the facilities of a hospital.—H. NEUMAN, M.D., in *J. A. M. A.*, April 24, 1943.

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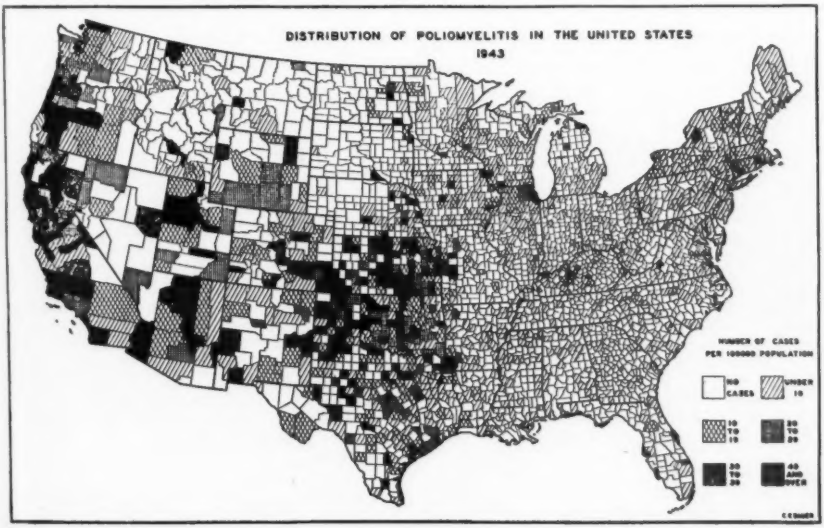
## Chemotherapy of Gonococcic Infections

Uliron, Disulon and sulfamethylthiazole have been withdrawn from clinical investigation because of their toxicity. *There is no place for sulfanilamide in the treatment of gonococcic infections.* Sulfapyridine has a higher incidence of toxic reactions, both general and within the urinary tract, than have sulfathiazole and sulfadiazine and therefore there is seldom any indication for its use. Sulfacetamide, though less toxic than the former drugs, is inferior to sulfathiazole and sulfadiazine. At present, sulfathiazole is recommended more highly than sulfadiazine. It is felt that the maximum safe total dosage without a rest period is 20 to 25 Gm.—R. D. HERROLD, M. D., in *J. A. M. A.*, June 5, 1943.



## The Intestinal Toxemia Patient

It is difficult to trace the origins of various dysfunctions, but after many years of close study I have come to the conclusion that toxic absorption may well be considered as a primary cause. With such a statement before us, thoughts must first turn to the intestinal tract as the greatest potential source of toxic absorption.

To have continual absorption must mean a vitiated blood-stream, a lack of the proper nourishment required for the various organs of the body, a deterioration in general resistance to infection, a damping down of the activities of the ductless glands on which so much depends. Granted all this, it is easy to understand the incidence of other foci of infection which in their turn contribute to the general state.

The search for the focus of infection may be a long one, and in the history of the condition even the smallest point is of importance. Though the laboratory must occupy a definite place in the investigation it must be a servant and not a master. Clinical observation of small points can be confirmed by laboratory findings. Though for the most part the bowel must be considered the primary focus, teeth, tonsils, accessory sinuses, etc., have all to be looked at and their possible contribution to the toxic state evaluated. Though such foci may well be secondary in advent, they often come to overshadow the whole condition, and when improvement follows their being cleared up, they are considered to be the only focus worthy of consideration. How often has one seen a really first-class result being missed because only one focus has been dealt with. Teeth have been extracted wholesale, with some improvement; accessory sinuses cleared, with benefit; tonsils removed with advantage; yet the final result has been somewhat disappointing because the primary focus has been overlooked.

Often in the history of the case, the fact that there is a regular bowl action will lead one to say that the intestinal tract is above suspicion, yet examine the abdomen and there is definite evidence that the cecum is not empty, probably has not been cleared for years. This daily bowel action is what I call an *overflow action*, leaving behind a source of toxic absorption that is always active. And active it is since there is direct absorption through the portal circulation into the liver—the refuse destructor of the body—which becomes clogged up, lowering its function and permitting the poisons to overflow into the general circulation. Because of this, there is much confirmatory evidence in the blood-stream, in the urine and in the stools to put up against the clinical picture and give a sound foundation for a line of treatment that is really beneficial.

### Clinical Picture

The clinical side gives the best indication of the state of the patient. Who has not seen the muddy-skinned, lethargic person who complains of nothing in particular and everything in general; the person who wakes up in the morning dull and heavy, muzzy-headed, who improves as the day goes on, but who reaches home after his day's work almost too exhausted to eat; who stimulates the jaded body with alcohol, recovers sufficiently to have a large meal, after which with a sigh of content sits back in his chair and promptly goes to sleep, and later goes to bed to continue that heavy sleep from which he wakes in the morning quite unrefreshed? Tonics recognizable and unrecognizable are swallowed with hope, but without benefit. Sooner or later he gets to the stage of reading every advertisement that seems to bear on his condition. He reads of the benefits of the daily dose of saline and tries it, not because his bowel does not act regularly and well but because he reads, and to some extent believes, that the elimination of poisons from the bowel is good and he does get benefit from his daily dose.

The daily dose is not an unmixed blessing, since by its long-continued use there must be an increasing irritation of the colon mucosa, a more ready absorption of the liquid content of the bowel, and a very possible increase in symptoms from this very cause. An occasional saline is excellent, an oft-repeated dose is wrong.

Then, you will rightly ask, how can elimination be accomplished without risk of doing harm in other ways? The urine analysis is of the greatest value in that it will give information as to the region of delay in the bowel. The two important parts are the cecum and the terminal coil of the ileum. In the urine, one may find large amounts of skatoxyl or indican or both together. The former indicates the cecum, the latter the terminal coil as the site of the delay. I have satisfied myself both from X-ray examination and in cases seen on the operating table that such a deduction is correct, and for many years now I have been working on this idea with very satisfactory results.

I digress here for a moment to link up the toxic state with any possible endo-

crine imbalance. The end products of digestion include tryptophan and tyrosine which are the precursors of thyroxin and adrenalin respectively. If, then there is putrefaction of the amino acid tryptophan the end product is indican, so that the thyroid is deprived of its proper activating principle. Similarly, tyrosine is the end product of tyramine, which means that the suprarenals suffer, hence the occurence of hypothyroidism and hypo-adrenia which are so common in these toxic cases.

It is difficult in a limited space to develop fully the theory of the relationship between toxic absorption and disease, yet whether the clinical condition is caused or aggravated by such toxaemia there can be no question that so long as the tap of poisons is dripping into the blood-stream so much longer will the actual clinical condition persist. I know full well that critics will disagree, more especially if one uses "rheumatism" as an illustration of the theory. I am convinced that whatever other factors may be present, toxic absorption from the intestinal tract is often the underlying cause. I have heard as an argument against this that rarely, if ever, has "rheumatism" accompanied dysentery. That to my mind is no proof, for dysentery is an acute catarrhal condition which quickly clears up, whereas the rheumatism follows a chronic mucosa which has been going on for years.

While I have generalized in my statement about toxic absorption causing the never-well-never-ill, I have dealt with the most common conditions that have a clinical label from this point of view and have no reason to be disappointed with results. Some types of pulmonary disease have yielded, some skin diseases, to my great surprise, have yielded, duodenal ulcers have cleared up completely, and innumerable cases of "rheumatism" have gained benefit.

To investigate each patient fully is out of the question in a busy practice, but one simple urine test will often lead to the underlying condition. Half fill a test tube with urine, add a drop of hydrogen peroxide, nearly fill up with pure hydrochloric acid, and add a little chloroform. Shake. The chloroform will dissolve out the indican, leaving the purple-red skatoxyl in solution. To some extent the intensity of these colours will give the degree of toxic absorption.

And what is the treatment? Elimination. Stimulate the clogged liver with one of the bile salts preparations; relieve colonic spasm by belladona or benzoate; eliminate and absorb toxins by kaolin and liquid paraffin; soothe the general nervous system where indicated and heal up the catarrhal mucosa by vaccine therapy, and one is well on the way to getting results. Each case must be treated as an individual and not as one of a group. By such treatment, it is surprising how patients who had accepted their health as normal become really fit and well and resent the minutest departure from this new state of well-being.—*By* I. M. ANDERSON, M.D., *The Prescriber*, May, 1943.

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## Treatment of Cervicitis and Erosion

Application of Negatol (made by Eli Lilly & Co.) may cure postpartum erosions of the cervix; the more severe cases requiring electrical cauterization.

Chemical cauterization may produce stenosis and stricture of the cervical canal. Erosions, extrophia and endocervicitis may be treated by electrical cauterization. The proper technic requires deeper cauterization within the canal than at the opening so that during the healing process the everted cervical lips are drawn inward and the normal appearance of the cervix is restored. The canal should be dilated once weekly for three weeks following cauterization. If the endocervix is badly infected it should be coned out electrically or surgically. —H. E. SCHMITZ, M.D., in *Med. Clin. N. Am.*, June, 1943.

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## Tracheotomy in Bulbar Poliomyelitis

Measures of value in treating bulbar poliomyelitis are (1) postural drainage, with the patient lying on his side or face in a Trendelenberg position, so that mucous will run out of the mouth rather than into the trachea, (2) suction of the thick mucoid secretion from the throat, and trachea if possible, (3) tracheotomy. The tracheotomy should be done *before* the patient is in critical condition. Thick secretions are easily sucked out of the tracheotomy tube. Thus the patient can be carried past the dangerous stages.—T. C. GALLOWAY, M.D., in *J.A.M.A.*, Dec. 25, 1943.

(If a patient cannot breathe enough oxygen, one may inject either oxygen or air subcutaneously and thus relieve the struggling respiration. Advocates of the Kenny treatment of poliomyelitis state that their patients quickly respond to hot packs and the dyspnea disappears. —ED.)

# THUMBNAIL THERAPEUTICS

## Fluid Administration Beneath Fascia Lata

• In 261 consecutive infusions of one liter of saline solution or 5% dextrose beneath the fascia lata the solution was delivered in an average of 56 minutes while the average absorption time for this amount of fluid by hypodermoclysis in 33 patients was 167 minutes. Excretion of phenolsulfonephthalein dye in the urine indicated the parenteral fluid was rapidly absorbed probably in the loose areolar space and capillary and lymphatic area beneath the fascia lata. Dehydration did not affect the absorption rate, which was more rapid in elderly persons. Injections in the lateral thigh caused a minimum of discomfort. Since the absorption is rapid and the technique simple, fluid and electrolyte needs may be renewed frequently.—R. K. FINLEY, M. D., in *Am. J. Surg.*, Mar. 1944.

## Trachoma

• The oral dosage of sulfanilamide is 2 Gm. at first and then 1 Gm. every four to eight hours over a period of a week or ten days. It seems definite that secondary infections are reduced and that the majority of physicians using this drug have noted definite improvement from the disease, especially from corneal involvement. — PARKER HEATH, M.D., in *J.A.M.A.*, Jan. 15, 1944

## Treatment of Pertussis

• The injection of adrenal cortex extract for the amelioration of pertussis symptoms is more effective during the course of the disease than were the injections of pertussis antigen, Sauer's vaccine (an antigen-vaccine mixture) or triple typhoid vaccine.—L. JACOBS, M.D., in *Arch. Ped.*, Oct. 1943.

## The "Cold" Treatment of Burns

• The common practice of covering the burned patient with a heated cradle may be definitely harmful. Methods of cooling the room may be of value in the treatment of burns in the summer time. —*J.A.M.A.*, April, 1943

## Uveitis (Iritis)

• The eye with acute uveitis is helped in some cases by the oral use of sulfonamide drugs. Indiscriminate use of these drugs is to be avoided. Sulfadiazine and sulfapyridine have proved about equally effective. When the source of the uveitis is related to the gastrointestinal tract, sulfadiazine and sulfapyridine offer help. The key to successful treatment is to attack the causative agents. In a moderate degree of iritis, recovery is sometimes hastened by the use of sulfonamide compounds. Choroiditis is least affected by such treatment. Sympathetic uveitis or ophthalmia so far has been unevenly affected either by high dosage for short periods or low dosage over long intervals. This ocular catastrophe justifies continued clinical investigation to determine the value of its treatment by chemotherapeutic agents. — PARKER HEATH, M.D., in *J.A.M.A.*, Jan. 15, 1944

## Treatment of Gas Gangrene

• Don't amputate for gas gangrene. Don't wait until gas can be felt before making the diagnosis. Conservative treatment is all that is needed (free incision into the infected muscles; irrigation with hydrogen peroxide; supportive measures).—N. T. KIRK, M. D., Major General, The Surgeon General's Office, *before the Interstate Postgraduate Meeting in Chicago*, Oct. 26, 1943

## Radium for Pharyngeal Lymphoid Tissue

• Lymphoid tissue in the pharynix often hypertrophies after tonsillectomy, and carries on as a focus of infection. This lymphoid tissue may be treated with radium. — H. L. WILLIAMS, M. D. in *Proc. Mayo Clinic*, Aug. 23, 1943.

## Mandl's Paint For Vincent's Angina

• Mandl's paint is a good local remedy for Vincent's angina. When the infection is generalized over the mouth or throat, it should be treated by insufflating arsenic powder of the affected membrane or by giving a small injection of an arsenic compound intravenously.—*E.E.N.T.M.*, Feb. 1944.

# DIAGNOSTIC POINTERS

## Diagnosis of Myasthenia Gravis

• Myasthenia gravis is the only disease of the many with which muscular weakness is associated, in which the symptoms are aggravated by quinine and improved by prostigmine. The use of these two drugs, first quinine, followed by prostigmine is suggested by L. M. Eaton, M.D., of Rochester, Minn., as a diagnostic test. Two doses of quinine sulfate each 10 gr., two hours apart will produce weakness within two hours after the second dose. Within five to nineteen minutes after a subcutaneous or intramuscular injection of 5 mg. of prostigmine methylsulfate, improvement can be noted.—in *Ann. Int. Med.*, Oct. 1943.

## Proctology Errors

• By all odds, the most common mistake made by general practitioners, in reference to anorectal diseases, is (1) failure to perform an anorectal examination and (2) failure to make a thorough examination.—HARRY E. BACON, M. D. (letter to CLINICAL MEDICINE).

## Cancer of the Colon

• Cancer of the colon should always be suspected when an individual past forty years of age, whose bowels have always been regular, develops constipation of increasing severity without change of diet or habits, or when a constipated patient becomes more so without obvious reason. The constipation is at first intermittent, and may alternate with diarrhea, or an urge to go to stool without effectual evacuation. —ARTHUR F. HURST, M. D., in French's "Index of Differential Diagnosis" (Wm. Wood & Co., Publishers).

## Pyelitis of Pregnancy

• We do not make a diagnosis of pyelitis of pregnancy unless the patient *complains of pain in the back*. Pus in the urine of a pregnant woman does not necessitate a diagnosis of pyelitis.—*University of Iowa*, School of Medicine.

## Rheumatoid Arthritis

• The prodromal symptoms of rheumatoid arthritis are: 1. Weakness of the intrinsic muscles of the foot, causing acute flat foot. 2. Creaking neck. 3. Pain and tingling sensations in the fingers and often in the feet. 4. Muscular cramps.

In the second, or early arthritic stage, symmetrical periarticular swellings of the fingers (spindle joints) are characteristic; extreme but irregular muscular weakness; disturbed circulation with bluish, cold extremities and sweating palms; glossy skin and a general dusky, semi-cyanosed complexion. X-ray: *General* decalcification of bone.—H. WARREN CROWE, M. D., in *Med. World (Lond.)*, March 3, 1944.

## Arthritis and Allergy

• Food allergy is a common cause of tenderness and swelling of the joints. Skin tests and elimination diets indicate which foods should be avoided.—J. A. TURNBULL, M. D., in *AM. Jour. Die. Dis.*, June 1944.

## Malaria Following Surgery or Injury

• Injury or a surgical procedure may precipitate a malarial attack. Fractures, contusions, burns, wounds, appendectomy and hemorrhoidectomy have been followed by acute malaria. All responded well to therapy.—R. W. RAVEN, M. D., in *J. Royal Army Med. Corps.*, Feb. 1944.

## Early Morning Bowel Movement

• There are many persons who have to get up around daybreak to pass gas or to have a bowel movement, which is often soft. The cause of this syndrome is unknown. It may be due to achlorhydria and may be helped by the giving of hydrochloric acid. Occasionally, it is due to allergic food sensitiveness, so a good question to ask is, "Did you ever go without supper to see if this brought relief?" If it did, one or more foods may have been responsible for the distress. One should always ask if it is pain (arising from a spondylitis) which gets the patient out of bed.—W. ALVAREZ, M. D., in "Nervousness, Indigestion and Pain" (Paul Hoeber Co., Publisher).

# NEW BOOKS

**Any book reviewed in these columns will be procured for our readers if the order, addressed to CLINICAL MEDICINE, Waukegan, Ill., is accompanied by a check for the published price of the book.**

*I can study my books at any time for they are always disengaged.*—CICERO

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## ROENTGEN INTERPRETATION
### *Holmes and Ruggles*

ROENTGEN INTERPRETATION. *By George W. Holmes, M. D., Roentgenologist to the Massachusetts General Hospital and Clinical Professor of Roentgenology, Harvard Medical School, and Howard E. Ruggles, M. D., Late Roentgenologist to the University of California Hospital and Clinical Professor of Roentgenology, University of California Medical School. Sixth edition, thoroughly revised. 364 pages; 246 engravings. Fabricoid. Reprinted Sept. 1943. Price $5.00. Philadelphia: Lea & Febiger.*

This small volume has a tremendous amount of clinical information packed away in nuggets here and there throughout the text. Sketches show common diseases, anomalies and abnormalities that are so readily diagnosed wrongly.

"In making examinations with this method, as with the older ones, the three following stages, should be kept distinctly and separately in mind: First, attention should be given to observing carefully the appearances which present themselves; second, a careful record should be made of these appearances in some simple and direct way which shall be a record of *facts*, not of opinions; third, the observations made should be well considered by themselves and in connection with information furnished from other sources, the evidence from each source being given just, but not exclusive consideration, before making the diagnosis."

This quotation from the introduction is a bit of diagnostic wisdom that may be applied to all indirect methods of making a diagnosis.

The section on discussion of heart size as determined by x-ray is very practical. "Rest in bed for a few weeks may reduce the transverse diameter of the heart 5 to 10 mm . . . When the diaghragm is high, the apex is raised and the cardiac shadow is increased principally in its transverse diameter."

The sketches showing calcifications around the shoulder joint and abnormalities in the lateral view of the foot are valuable. In fact, it is hard to single out any single section, as all have a high standard of usefulness.

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## BEHIND THE UNIVERSE
### *Berman*

BEHIND THE UNIVERSE: A Doctor's Religion. *By Louis Berman, M.D. New York and London: Harper and Brothers. 1944. Price, $2.75.*

This book is a scholarly exposition of general science, medicine and life in both its material and psychic forms and exponents.

When first read, it seems a bit "deep" but as one studies the author's well linked discourse, one begins to realize that there is presented a connected, thoughtful exposition of the interrelations of the various sciences with special emphasis on the biologic.

His description of the differing personalities exhibited by the same individual is typical of the book: "Clinical observation has demonstrated that two or more active, self-integrating and self-regulating psychic systems, so disconnected and highly evolved as to be in effect separate persons, may coexist in one brain. Their concurrent existence is never known to the individual so afflicted, because he is unable to bear the emotional conflicts responsible for the diverse personalities. The characteristics of the dissociated personalities may be complementary or antagonistic. . . With their different tastes and habits, they may have different interests and friends."

Mental disturbances arise where the various personalities come in conflict, as in the case of studious professional men who cannot resist the urge to have intercourse with pretty girls possessive of not one functioning brain cell.

Some of the ideas presented show a grasp, unusual in physicians, of life forces, and science's attempts to answer a few of the many questions that arise in thoughtful men's minds.

This book is the result of one man's attempt to answer for himself these questions. It is the type of book that can be referred to again and again with profit.

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## THE YOUNGEST OF THE FAMILY
### *Garland*

THE YOUNGEST OF THE FAMILY: His Care and Training. *By Joseph Garland, M.D., Physician to Children's Memorial Medical Department, Massachusetts General Hospital; Consulting Pediatrician, Massachusetts Eye and Ear Infirmary; Instructor in Pediatrics, Harvard Medical School. Revised Edition. Cambridge. Massachusetts; Harvard University Press. 1943. Price, $2.00.*

As the author states, this book deals with the care of the infant reduced to its simplest terms. It is revised up to the present moment.

The mother who reads such commonsense statements as these will raise a more normal baby. "It should be the privilege of both father and child to have an opportunity of getting acquainted. . .they may have a few minutes quietly together before the baby's supper and bedtime. This should not be the occasion of too much hilarity, as over-excitement at bedtime may often result in broken and restless sleep. Overstimulation of the nervous system by too much attention is one of the principle causes of digestive disturbances, sleeplessness and hight terrors."

Or, "From the first, the baby should be trained to stay in his pen and in a room alone. Once he is allowed to feel that he has the run of the house and that it is prerogative to have company at all times during his waking hours, he may never again be reconciled to being left alone and may never acquire the faculty for amusing himself" (thus becoming one of those persons who must always be with a group or be miserable).

It is a temptation to quote from many of the pages. The author's advice is always balanced, as witness his commendation of breast feeding without condemning artificial feeding when necessary.

This is the perfect book for mothers, even those who feel that they are "experienced" (if any one ever can be truly experienced and infallible at such a vital job).